DOCUMENT RESUME

ED 125 829 RC 009 313

AUTHOR	Manone, Carl J.
TITLE	The Improvement of Education in Rural Thailand -- A Multi-dimensional Approach.
INSTITUTION	Ministry of Education, Bangkok (Thailand).
SPONS AGENCY	Agency for International Development (Dept. of State), Bangkok (Thailand).
PUB DATE	Apr 73
CONTRACT	AID-493-038-T
NOTE	235p.
EDRS PRICE	MF-$0.83 HC-$12.71 Plus Postage.
DESCRIPTORS	Adult Education; Concept Formation; Criteria; *Developing Nations; *Educational Improvement; Educational Objectives; *Elementary Education; *Guides; Input Output Analysis; Nonformal Education; Organizational Development; Pilot Projects; Program Evaluation; Research and Development Centers; *Rural Areas; Systems Approach; *Teacher Education
IDENTIFIERS	*Thailand

ABSTRACT

Detailing a multidimensional approach to educational improvement in Thailand, this document presents an in-depth description of a proposed 10-year pilot project aimed at elementary schools, teacher education, and rural education. The document's format includes numerous schematics and the following major divisions: a project summary; the national educational objectives; project objectives and assumptions; conceptual guidelines and supporting rationale; project features and implementation procedures; inputs, time phasing, and financing; outputs and spinoffs; project evaluation; and a bibliography. Project goals are identified as planning and promoting a comprehensive, rural-regional, action-research and development center directed at the traditional sector and emphasizing practical programs, skill development, and applied research. The project's major thrusts are identified as: elementary, teacher, and adult/nonformal education and educational administration. Guiding criteria are identified as: national self-reliance; educational quality; productive innovation; maximization of the multiplier effect; production and time oriented activities; and a systems enterprise or multidimensional approach (multifunctional, multiinstitutional, multifocused, multidisciplinary, multijurisdictional, multidirected, multiprovincial, multisectoral, and multinational). (JC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED125829

rec 28-06-76

THE IMPROVEMENT OF EDUCATION

IN

RURAL THAILAND

– A Multi-dimensional Approach

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A Report Prepared
for the
Ministry of Education
Royal Thai Government

in Cooperation with the

United States Operations Mission to Thailand
Agency for International Development
Bangkok, Thailand

Under Contract No. AID 493-038-T

by

Dr. Carl J. Manone

April, 1973

RD009313

Disclaimer:

"The content represents the viewpoints of the author and not necessarily those of USOM or the U. S. Department of State."

TABLE OF CONTENTS

SECTION		PAGE
	FOREWORD	vii
	INTRODUCTION: An Urgent and Daring Venture	ix
I	SUMMARY DESCRIPTION OF PROJECT	1
	A. The Dimensions of Multi-dimensionalism	3
	B. Schematic: Improving Learning -- An Unbreakable Chain	15
	C. Project Schematic: A Directional Model	17
II	NATIONAL EDUCATIONAL OBJECTIVES AND PROBLEMS	19
	A. The Role of Education	21
	B. Sources of Information and Data	23
	C. National Educational Objectives, 1972 - 1976	25
	D. Educational Problem Areas	27
	E. Of Numbers and Navigation	46
	F. Schematic: Project Direction	51
III	PROJECT OBJECTIVES	53
	A. Objectives: What the Project Aims to Do	55
	B. Resources, Demands, and the Twelve Camels	65
	C. Schematic: Limited Resources	69
IV	ASSUMPTIONS UNDERLYING THE PROJECT	71
	A. Assumptions	73
	B. Schematic: The Height of a Pinnacle	77
V	CONCEPTUAL GUIDELINES AND SUPPORTING RATIONALE	79
	A. Elementary Education Priority	81
	Chart 1: *Student Enrollment Distribution, 1971*	83
	Chart 2: *Educational Staffing (All levels), 1972*	85
	Chart 3: *National Budget, 1972*	87
	B. Rural Focus	91
	Chart 4: *Teacher Education Institutions*	95
	C. Quality Stress	93
	Chart 5: *Total Enrollments & Expenditures for CAO Schools, 1972*	99

1 ii blank

SECTION PAGE

D. Broad Spectrum Curriculum 98
Chart 6: *Curriculum Development: A Process of Reconstruction Utilizing a Broad Spectrum Approach* 101

E. Environmental Influence and Pilot Approach 105
F. Existing Institution and Leadership Utilization 109
G. Teacher Training Emphasis 111
Chart 7: *National Radiation Effects of Inputs at the Teacher Training Level* 113
Chart 8: *Teacher-Learner Directional Model with Implications for Resource Investments* 115

H. Skill Concentration 119
I. Cooperative Team Effort 121
J. Educational Technology and Mass Media 126
K. School Design and Modernization 129
L. Decentralization Trend 131
M. Innovation and Research 134
N. Evaluation and Long-range View 136
O. The Centrality of People 138

VI PROJECT FEATURES AND IMPLEMENTATION 141

A. Geographic and Institutional Selection 143
Chart 9: *Northeast Educational Development Complex* 149

B. Curriculum Development and Textbook Writing 147
Chart 10: *Textbook Preparation and Production Chart* 151
Chart 11: *Textbook Writing: Starting Points* 155
Chart 12: *Curriculum Development and Textbook Writing Teams* 161

C. Instructional Materials Development 160
D. Inservice Teacher Education 169
Chart 13: *Diagrammatic View: NEDC Sub-centers and Their Major Functions* 177
Chart 14: *Diagrammatic View: The NEDC and Participating Institutions within a Regional Context* 179

E. Consultants and Participants 175
Chart 15: *Specialized Areas Related to the Improvement of Education with Emphasis on Teacher Education* 181

SECTION PAGE

F. Organization and Administration 189
Chart 16: *Schematic View: Project Coordination and Communications* 195

VII INPUTS, TIME PHASING, AND FINANCING 197

A. RTG Inputs 199
B. External Assistance Anticipated Inputs 200
C. Explanatory Input Data Charts 202
D. Time Phasing 203
E. Project Financing 212
Input Data Charts (Refer to "C" above.)
Chart 17: *Thai Personnel: Staffing Requirements* 213
Chart 18: *Estimated RTG Baht Budget* 215
Chart 19: *External Personnel: Staffing Requirements* 217
Chart 20: *Participant Training Requirements* 219
Chart 21: *External Assistance Budget* 221
Chart 22: *Project Funding Summary (1973 - 1984)* 223

VIII OUTPUTS AND SPIN-OFF 225

A. Outputs: Description, Magnitude, and Completion Dates 227
B. Possible Spin-off 254

IX PROJECT EVALUATION 259

A. The Complexities of Evaluation 261
B. Evaluation of Project at Source 264
Chart 23: *RTG Source Criteria: Self-Evaluation of Project Proposal Before Adoption* 265

C. Evaluation of Project During Operation 268

X BIBLIOGRAPHY 271

FOREWORD

The proposal described in this volume presents in considerable detail a bold and challenging undertaking. I strongly concur with the values, ideas, and approaches which it expresses. The introductory statement, which in a way represents a rally call for urgent action, again closely coincides with feelings of my own. We are grateful to USOM for its kind and timely assistance in making available Carl J. Manone to work closely with us in drafting a proposal written from a Thai frame of reference. My gratitude also extends to the many Thais in the Ministry, and those representing other agencies, who made significant contributions. The project as described is relevant, realistic, and representative of the educational problems and priorities our nation currently faces. In fact, I deeply feel the proposal as written will prove of considerable value to other nations of the world seeking more effective answers to their immense educational problems.

The proposal is now complete. What is now needed are discussion, refinement, and, above all, a sincere spirit of positivism. We cannot afford the luxury of getting bogged down on petty differences and details; and we must not become too disturbed if we cannot find all the answers to all the problems immediately. With time -- and with good planning -- they will come. Innovation is a venture into the unknown; it calls for at least a modicum of patience and good faith.

We have heard much in the last decade about sectoral studies and systems analyses – and they make sense. I am most pleased, therefore, that this proposal, which is both conceptual and concrete, deals with the educational problems of our nation in a sectoral, multi-dimensional way.

Implementation of the project proposal will assuredly not be without its frustrations and difficulties. It will challenge our limited resources, our imagination, and our organizational-administrative skills. It will require considerable support from a number of external assistance agencies. With sustained and unselfish dedication, with hard work and without fanfare, I believe it will contribute significantly to our Government's unending efforts to improve the socio-economic conditions of our many millions living in the rural sector.

The resources we can and we must mobilize if we can but muster the will.

B. Attagara.

Bhunthin Attagara
Under-Secretary of State for Education

p vi blank

AN URGENT AND DARING VENTURE

Throughout the world, but especially in the developing nations, we are currently witnessing a growing impatience with the pace and distribution of social and economic progress. Thailand is no exception. Despite the achievement of enormous growth and development during the past two Five-Year Plans, as well as during the beginning years of the present Plan, much remains to be done. Awesome disparities in income still exist between the eighty percent of the people living in the rural sector and the twenty percent working in urban centers. But the disparities do not end here: Medical facilities, educational opportunities, everyday living conveniences and amenities, avenues for transportation and communication, and possibilities for social interchange and recreational pursuit all overwhelmingly favor the minority of the population fortunate enough to have had accidental circumstance locate them in an environment of higher incomes, easier living, and brighter lights.

Future progress obviously is needed on many fronts. The spiraling growth in urbanization and industrialization in Thailand is irrefutable and irreversible. It will continue, and it will challenge the nation's most creative minds to make certain that such growth is imaginatively planned and efficiently executed. However, equally irrefutable and irreversible, at least for the foreseeable decades ahead, is the fact that as many as four out of every five citizens will be living in the traditional sector and will be depending almost totally on agriculture and agriculturally-related enterprises for their daily living. And Thailand, so rich in its tradition of freedom, independence, and compassion, will have to open the door of opportunity more widely if these citizens are to enjoy a better

1 x blank ; no p. x in original

life and discover a more promising future. Bestowing upon its lowliest and poorest people a new respect and a new measure of human dignity through better and more relevant education is an inescapable prerequisite if Thailand is to construct a more egalitarian society and more open and democratic institutions. The task is towering; it is also urgent. The growing, ominous gap between the haves and have-nots, both on international and domestic fronts, cannot continue endlessly. Silence can no longer be construed as golden; patience has its limits and precious time may be running out.

The compelling reasons of national investment, security, humanitarianism, and simple decency demand that in the days and months ahead more ambitious attempts than have been launched in the past be directed to improving as swiftly as possible the plight of our rural people. The job, to say the least, will not be easy. It will tax both our best minds and our scarce resources. It will call for a new sense of daring, more imaginative planning, more innovative thought, bigger and bolder action. New ground will have to be broken; new directions charted. Some departures from the past will be required, for the solutions of yesterday, it is now quite evident, have been too slow and too feeble in attempting to solve the staggering problems confronting our striving and rapidly growing population.

The fact that Thailand allocates almost as much of its annual budget to education (19.1 percent in 1973) as it does to its top priority sector, national defence (19.5 percent), should constitute convincing evidence of the faith that Thai political and educational leaders place on the power of the classroom, with or without walls, to shape national destiny. But faith alone, and even money, are not enough. Imaginatively conceived action programs, founded on sound theoretical and conceptual constructs, and balanced by pragmatic and hard-earned practical experience, are surely needed. The program described

in this document is that kind of proposal. It is an ambitious proposal; its aim is high. Approximately two hundred Thais, as well as a dozen or more foreign specialists, have contributed and reacted to the design and development of the proposal over the past twelve months. Additional suggestions and constructive criticisms, however, are needed to improve and refine the proposal even further. There will also be a need for foreign support by those external assistance agencies that have confidence in Thailand's future, that possess the resources and willingness to contribute to that future, and that – after study and analysis of this proposal – feel that the program as planned, or with modification, is worthy of implementation. The Thais – that is, a grouping of various RTG ministries and agencies responsible for educational leadership in the nation – have taken the lead in terms of initiative, leadership, and responsibility. Their hope is that other individuals and institutions may see fit to join their effort.

The multi-dimensional project described in the pages that follow, it should be emphasized, is both comprehensive and complex. The shortcomings of our current educational program in Thailand, both quantitatively and qualitatively, are serious and costly. Hardly a week goes by without witnessing in the local newspapers new problems, attacks, and crises. And the problems are not apt simply to disappear. Rather, unfortunately, the reverse is more likely to be true. The problems, both in number and in severity, will probably grow. Consequently, we must not delude ourselves into believing that correction and remedial action will somehow come about automatically, or that they may come about by means of minuscule efforts, scattered initiatives, or simple, easy-to-manage, short-term projects. Elephants do not yield to sling-shots just as intractable problems do not bend before easy, simplistic schemes.

The nation Thailand hopes to be in 1980, 1990, and even in the twenty-first century is directly hinged to the kind of education we now provide. Our culture, our institutions, our values, and even our unity as a free nation are inextricably tied to what our young people of today learn, how effectively they learn, what they value, how they feel, what they cherish, what they are willing to fight for.

The proposal unfolded in the pages that follow is urgent and daring. It has the potential for being one of Thailand's most productive educational endeavors. It represents a strategy to achieve a fuller measure of self-reliance in the indispensable area of educational action research and development with particular focus on the rural area. To transform it into reality will require the efforts and talents of many. In essence, it really represents an open and challenging invitation to Thai leaders of rank high and low, representing numerous ministries, the mass media, and other agencies, to join hands in a common cause to uplift the lives of millions of people in rural Thailand who yearn for and deserve a more hopeful tomorrow-- a tomorrow that is within their lifetime. If we as educational leaders do not champion their cause, who will?

Section I

SUMMARY DESCRIPTION OF PROJECT

A. The Dimensions of Multi-Dimensionalism

1. Descriptive Overview

The goal of this project is to plan and promote an institutional capability within Thailand to create, implement, and evaluate perpetual reform and innovation in education through the creation of a comprehensive regional action research and development center. The center will be located in one of the rural areas of Thailand. Its central focus will be the traditional sector and the role education can play in upgrading the lives of people living there.

The functions of the center will be action oriented; emphasis will be directed to practical programs, skill development, and applied research. The center, which will be made up of several interrelated components, will concern itself primarily with formal educational institutions; but it will also give considerable attention to nonformal and adult education and the ways in which they can supplement and support formal schooling by providing opportunities for relevant life-long learning.[1] It will reach out into the surrounding community,

(1) UNESCO. Learning To Be. 1972, p. 189. "Artificial or outmoded barriers between different educational disciplines, courses and levels, and between formal and nonformal education should be abolished; recurrent education should be gradually introduced and made available in the first place to certain categories of the active population."

which will serve as an actual laboratory for learning, in a direct attempt to relate learning to living, and to the problems and needs of village people.

2. Major Thrusts

The center, in a sense, will represent a microcosm of a state or national educational system, but with fewer functions and more limited objectives. It is planned as a pilot program which, if successful, could readily serve as a prototype, with appropriate adaptation, for other rural regions of the nation. The project concentrates on four key target areas:

(a) Elementary Education (e.g., curriculum revision in all subject areas, instructional materials, tests and evaluation tools)

(b) Teacher Education (e.g., preservice and inservice education, curriculum content, methods of teaching, instructional materials, instruments and methods of evaluation)

(c) Adult and Nonformal Education (e.g., teacher training, curriculum development, and instructional materials related to functional literacy, occupational preparation, agricultural pursuits, health education, population education)

(d) Educational Administration (e.g., leadership training, organization and administration, supervision, program planning, finance)

3. Guiding Criteria

The project, during its various stages of development, will be guided by the following criteria:

(a) Emphasis on educational quality as distinguished from quantity;

(b) Stress on sensible and productive innovation; increased quality cannot take place without imaginative change;

(c) Direction aimed at a high degree of national self-reliance;

(d) Maximization of multiplier effect so that limited inputs in a pilot operation possess the potential for widest possible impact;

(e) Focus on activities that are strongly production and time-oriented in order to meet Thailand's urgent needs now for specific and improved instructional materials, practices, and programs; and

(f) Concentration on educational planning and development as a systems enterprise, broad in scope, many-faceted, youth- and adult-directed, pervasive and life-long.

4. Multi-dimensionalism Anatomized

A systems approach, called for in the final criterion just cited, in its simplest terms means a comprehensive project made up of

numerous facets.[1] Consequently, the project is multi-dimensional in nature. To be more specific, the project is:

(a) Multi-functional: It emphasizes curriculum revision, pre-service and inservice teacher training, materials of instruction, administration and supervision, and research and development;

(b) Multi-institutional: It focuses primarily on elementary schools, teachers colleges, colleges of education, and faculties of education at universities with elementary school training programs;

(c) Multi-disciplinary: It deals with all subjects (e.g., science, mathematics, social studies, language arts, music, art, physical education, and health) that should be taught to children of elementary school age;

(d) Multi-focused: It places highest priority on education provided through the formal school structure; at the same time, however, it gives attention to nonformal and adult education, which along with formal schooling, provide a continuum for life-long learning;

(e) Multi-jurisdictional: It calls for the closest cooperation and coordination between the Ministries of Education and Interior as well as

---

(1) Ibid., p. 175. "New educational strategies must proceed from an over-all vision of educational systems and resources according to their capacity to meet the needs of societies in continual change.... Under no circumstances should strategies be bound by the confines of one single medium, one form of institution or one so-called "systemic structure".

other ministries and governmental agencies which will be involved in the project;

(f) Multi-directed: It provides for strong centralized control from ministry offices in the capital in such basic areas as overall policy and priority determination, personnel and institutional assignments, budgetary allocations, and general supervision; at the same time, it authorizes considerable local autonomy to promote and encourage a high degree of initiative, leadership, and responsibility on the part of local personnel directly in field operations;

(g) Multi-provincial: It includes two changwats very directly, and a larger geographic area in more of an information-receiving rather than an active participative role;

(h) Multi-sectoral: It relates educational activities such as curriculum development, materials selection, and preservice and inservice teacher education to activities of other sectors such as population education, health education, agricultural production, and public information; and

(i) Multi-national: It seeks the assistance of other nations and external assistance agencies in selected areas of planning, implementation, and financing.

5. Emphasis on Totality

Multi-dimensionalism, of course, forcefully implies complexity.

It also implies the indispensable need for efficient organization, smooth communication, close coordination, and dynamic, flexible management. Education, in modern terms, can no longer be treated as a conglomerate of separate, independent entities. What an elementary school student studies (curriculum), for example, is related to what his teacher teaches (teacher training), and what materials he uses and how (instructional methodology and technology). The sharp lines that once divided formal education, nonformal education, and adult education are fading rapidly. The new name of the game is totality, wholeness, sectoral approach, and now, recently, inter-sectoral approach.(1)

The fundamental concept underlying the multi-dimensional approach is that education is a comprehensive and interrelated whole that is understood most fully and redirected most efficiently when it is perceived and acted upon as a total integrated system with linkages to other systems and sectors. Too often projects have been handicapped, or even doomed, from the start by limiting their scope (for example, concentrating on curriculum revision without giving attention to instructional materials and teacher training which are the chief vehicles for

(1) Ibid., p. 175. "Today, it is no longer desirable to undertake educational reforms in piecemeal fashion, without a concept of the totality of the goals and modes of the educational process. To find out how to reshape its component parts, one must have a vision of the whole".

implementing that revision) to fit the limited knowledge of the writer or designer, to coincide with the availability of funds, to facilitate management, or to simplify evaluation. By analogy, the diagnosis and proper treatment of a specific human ailment, especially if it is serious, requires a thorough understanding and study of the total biological organism from both a physical and psychological standpoint. To use a further analogy, urban renewal calls for far more than the improvement of living quarters; also required are measures of disease prevention and cure, recreational facilities, educational and rehabilitation opportunities, job employment, and, at base, a sympathetic sensitivity to the feelings, values, and aspirations of the dispossessed and disadvantaged. Similarly, education, to be understood and improved, must be perceived as a complex of numerous interacting and interrelated variables, constantly changing, that lose meaning, perspective, and vitality when treated as independent entities. (See Schematic B at end of Section.)

A case for multi-dimensionalism and program simultaneity related to educational reform in Africa -- with particular emphasis on teacher education -- was recently made by Professor John Hanson:

> "The centrality of the system of teacher education for maintaining or improving formal education in Africa has been widely recognized by visitors to African schools. Lip service is frequently paid by governments and development experts to the importance of the "multiplier effect" which can potentially be

achieved through investment in teacher education. (More recently, attention has been given in a few African states to the possibility of increasing this multiplier effect by devoting attention to the preparation of teacher educators.) Since only a small percentage of African children will receive more than primary level formal education and since the majority will continue to receive no more than the first few years of school, there is an ethical and practical imperative to go beyond lip service in the effort to provide sound, relevant, and increasingly stimulating education for these children. As implied above, probably the most significant channels for assistance to the education of the vast majority of school children in the developing African nations is through (a) the education of teachers (including headmasters) and (b) improved curricula designed for primary schools, including preparation and provision of the classroom instructional materials, teachers guides, and background materials for teachers which will give these curricula some chance of making a difference. Radical improvements are most likely when attention is given to both of these leverage points simultaneously."(1)

6. Limitations and Constraints

Education, with its fundamental objective of producing learning and behavioral change, lies at the very heart of what humans really are, what they might hopefully become. Unfortunately, it does not lend itself to easy simplification, acceleration, or even alteration. No

(1) John W. Hanson, Enhancing the Contribution of Formal Education in Africa: Primary Schools, Secondary Schools and Teacher Training Institutions, Overseas Liaison Committee, American Council on Education, Washington, D. C., 1971, p. 17.

matter how deep and threatening a particular crisis may be, and no matter how urgent the demand for rapid, remedial action, education, by nature, does not respond effectively to crash programs and solve-it-in-a-hurry schemes. Education is an investment in time; pay-off is not for today, but for tomorrow. The design of the multi-dimensional approach described in this proposal, therefore, is not nice, neat, and easy. However, limitations and constraints are required, especially at the start of a new project, to facilitate its management, to encourage initial confidence and success, and to insure that all available resources are directed in a coordinated fashion to clearly defined, but limited objectives. These limitations and constraints follow:

(a) The major target is the elementary school (not the secondary school or higher education) although adult and nonformal educational approaches will be included.

(b) The major thrust is teacher education (not higher education or vast participant training programs), including improved supervision and administration, as the fastest, most economical, and most effective avenue for upgrading the quality of elementary education.

(c) The concentration is on rural (not urban) education although it is quite likely that many of the findings and developments will have relevance to the urban sector.

(d) The initial scope is a pilot (not national) effort involving a limited number of institutions and people, and a manageable geographic area.

(e) The operation is phased (not a "one shot", "all-at-a-time" undertaking) with inputs of professional personnel and materials synchronized with such factors as advanced administrative arrangements, priorities of objectives, preparatory research, and the orderly assimilation of new personnel and materials into the local situation and culture.

7. Broad-brush Time Picture

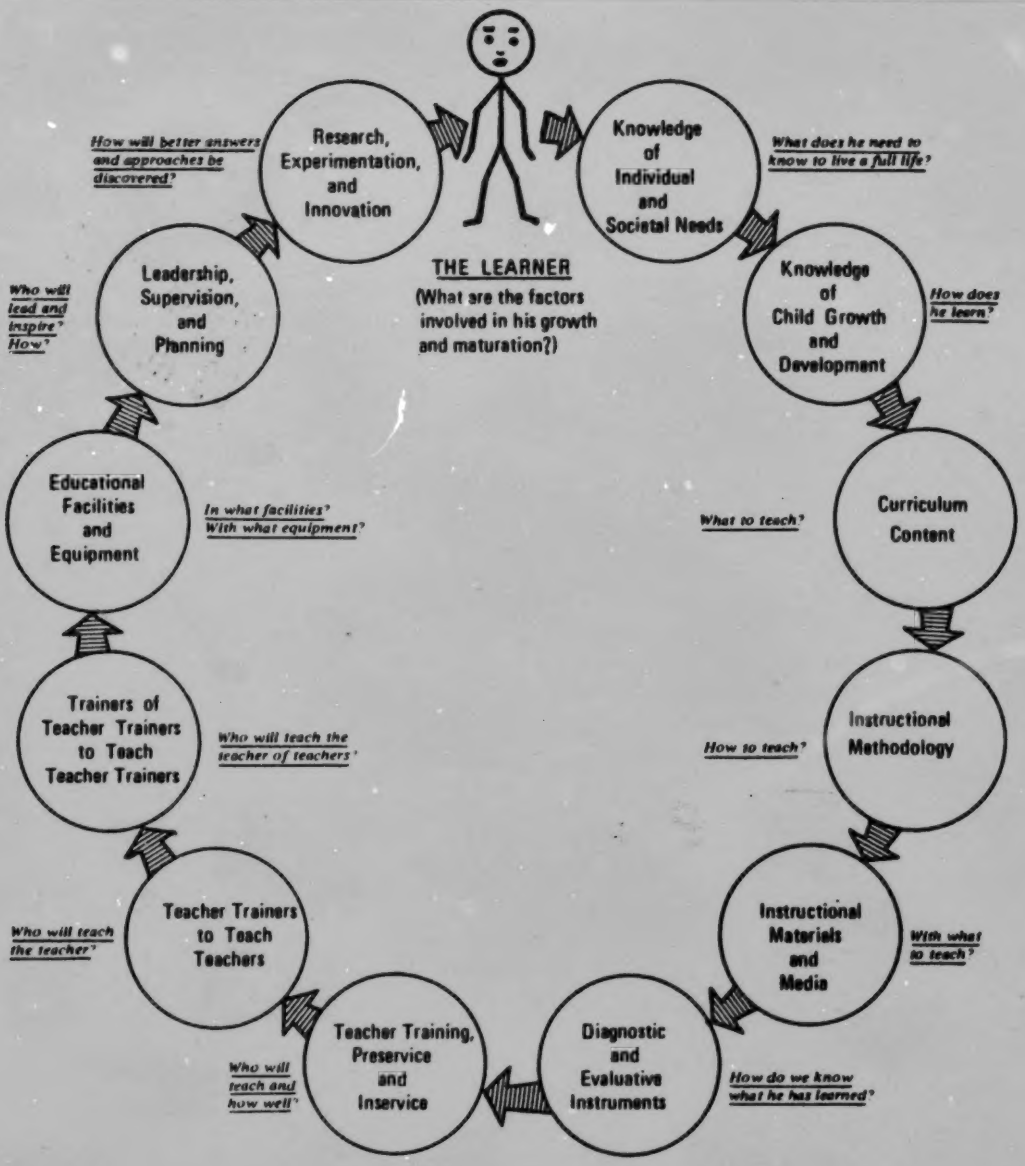
The project, which is planned as a ten-year effort, will get underway with a limited number of Thai educational leaders and planners supported by a cadre of non-Thai specialists. Both the Thai and non-Thai components will grow numerically after the initial planning and research period, hitting a peak professional load during the second year. The phase-out of non-Thai personnel will begin gradually during the eighth year. By the end of the tenth year, it is envisioned that Thailand will have developed a viable indigenous regional educational center capable of administering to the multiple and varied needs of rural society. As the project grows and activities expand, continuous evaluation will be called for to assess progress and to make necessary program modifications and revisions. Undoubtedly, there will be the

spin-off of new and potentially productive ideas. In order to capitalize on the best of such spin-off, project policies, contractual documents, and administration will have to be imaginative and reasonably open and flexible.

8. Unfolding the Project Schematically

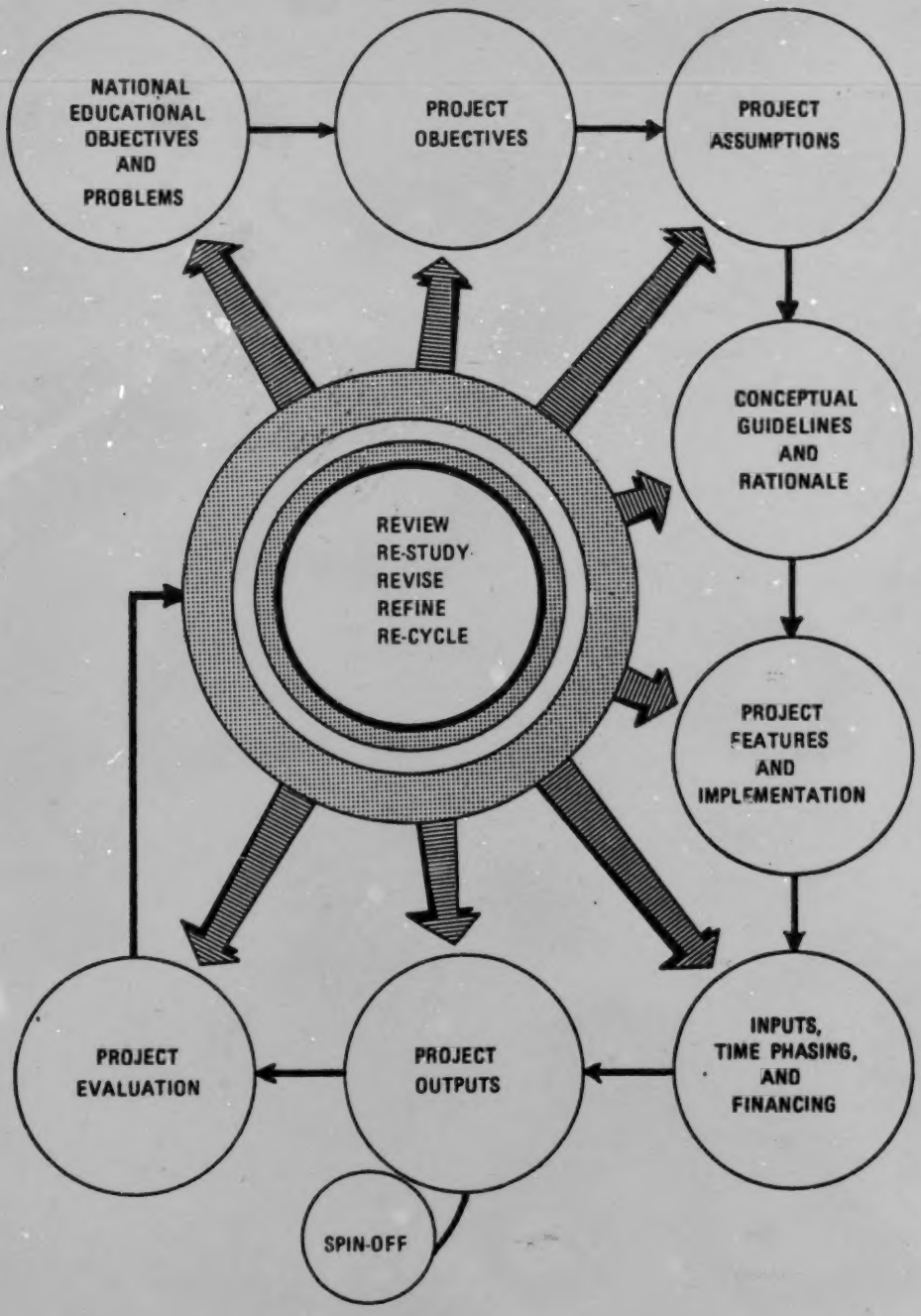
A diagrammatic overview of the total project is presented on the following page to facilitate study and analysis, in broad outline, of project rationale, structure, and direction which are described in subsequent sections of this proposal. (See Schematic C at end of Section.)

B. SCHEMATIC: IMPROVING LEARNING -- AN UNBREAKABLE CHAIN OF INTERACTING AND INTERRELATED COMPONENTS


THE LEARNER
(What are the factors involved in his growth and maturation?)
Research, Experimentation, and Innovation
How will better answers and approaches be discovered?
Knowledge of Individual and Societal Needs
What does he need to know to live a full life?
Knowledge of Child Growth and Development
How does he learn?
Curriculum Content
What to teach?
Instructional Methodology
How to teach?
Instructional Materials and Media
With what to teach?
Diagnostic and Evaluative Instruments
How do we know what he has learned?
Teacher Training, Preservice and Inservice
Who will teach and how well?
Teacher Trainers to Teach Teachers
Who will teach the teacher?
Trainers of Teacher Trainers to Teach Teacher Trainers
Who will teach the teacher of teachers?
Educational Facilities and Equipment
In what facilities? With what equipment?
Leadership, Supervision, and Planning
Who will lead and inspire? How?

p. 14 blank

C. PROJECT SCHEMATIC: A DIRECTIONAL MODEL



p. 16 blank

Section II

NATIONAL EDUCATIONAL OBJECTIVES AND PROBLEMS

A. The Role of Education

Education is a social institution which must be responsive to the problems, needs, and aspirations of the people it serves. It must concern itself with their social and economic welfare, their right and responsibility to participate in governmental affairs, and their desire to live comfortable and peaceful lives. Education, to be effective, must be efficient, but it must also be human; it must care.

The Royal Thai Government (RTG) allocates more of its annual budget, 19.1% in 1973, to education than to any other sector outside of national defense which amount to 19.5%. Education is perceived as a most significant factor related to socio-economic development as well as to the process of democratization. Appropriate education increasingly is being recognized as a prerequisite to success in other development areas such as agriculture, family planning, economic growth and its equitable distribution, and national unity and security. Relevant education, in fact, is indispensable for the modernization and institutionalization of all national endeavors from medical treatment and research to computer technology. To put it another way, self-reliance and education are inseparable partners; pace and progress in one is directly tied to the other.

p. 18-20 blank

Education in Thailand today, however, is not adequately fulfilling the gigantic responsibilities that have been thrust upon it. Despite impressive achievements, especially since the launching of the Government's First Five-Year Plan (1962-66), many problems remain and numerous objectives have been only partially satisfied. To make matters more serious, new problems, demands, and expectations have been piling fast and furiously on top of old ones. More people demand more and better education, industry cries for better trained personnel, planning experts deplore the lack of correlation between the major field of preparation of graduates and job openings, economists frustratingly continue to cite the growing disparity in personal income between rural and urban populations, and everyone, at least it seems, is deeply concerned about what the nation can and will do about crime, corruption, and complacency. And educators themselves continue to worry and work, seeking better answers to the nagging, relentless problems of illiteracy, wastage, and irrelevant and impermanent learning.

Faced with these problems, and many more, education must act; it cannot escape its share of responsibility; it has a central role to play. How capably it plays this role will have a direct effect on national well-being, values, unity, and pride. To play that role well requires, from the start, perceptive planning, a dogged sense of duty,

and the most discerning judgement in determining, designing, and developing strategic program activities that have the potential for doing the nation and its people *the most good. Such programs must* be founded, at the very outset, on (1) educational objectives which are nationally determined, and (2) major problems currently confronting the Thai educational system.

B. Sources of Information and Data

Before dealing specifically with national objectives and problem areas, it is important to identify the principal documentation sources for information which will be utilized, especially in this Section, but also in other sections of this document. The sources, selected because of their raliability and recency, are:

1. Educational Development Plan, 1972-1976, Ministry of Education, Bangkok, 1971.

   (An 804-page detailed description of Thai educational objectives, problems, and programs with a plethora of data and charts, and with specific reference to responsibilities assigned to individual sections and departments.)

2. Foreign Loan and Grant Requirements of the Ministry of Education during the Third Five-Year Plan Period, 1972-1976, Ministry of Education, Bangkok, 1971

   (A 114-page document outlining 84 individual projects related to increasing both quantity and quality in Thai education.)

3. Problems on Rural Elementary Education, Committee for Development of Rural Elementary Education, Bangkok, 1972.

   (A 12-problem highly descriptive and down-to-earth report to the National Security Council of the National Executive Council describing urgent problems in Thai rural education with recommendations for immediate remedial action.)

4. Education in Thailand: A Sector Study, Audrey Ward Gray and Alton C. Straughan, Jr., USOM, Bangkok, 1971.

   (A 270-page research study, based on more than 9,000 separate references to Thai education, presenting a comprehensive and well documented overview of education in Thailand.)

5. Thailand: Proposals for Educational Development, UNESCO, Paris, 1970.

   (A 147-page report outlining educational projects and pre-investment studies considered essential for the economic and social development of Thailand.)

6. Teacher Education in Thailand: Problems and Prospects, Edward J. Kelly, Henry J. Hermanowicz, and Herbert A. Smith, USOM, Greeley, Colorado, 1971.

   (A 122-page field survey concentrating on teacher education with suggestions for its improvement.)

The data and descriptive material to be found in the varied sources just cited are not always in agreement. There obviously are statistical differences, inaccuracies, and inconsistencies; however, they are considered not to be serious. Figures and data, for the most part, are in general concurrence; and the basic trend of thought in areas concerning objectives and problems is remarkably consistent. However, when

it comes to solutions, approaches, and priorities for achieving objectives and alleviating problems, differences are often pronounced and glaring. The program activities described with these pages represent an attempt to glean some of the best features and ideas from each research study and to incorporate them, after extended deliberation and consultation, into an innovative and far-reaching new project.

C. National Educational Objectives, 1972-1976

The major emphasis of the Second Five-Year Plan was on quantitative expansion. The Third Five-Year Plan, which covers the time period from October 1971 to September 1976, while placing a good deal of weight on expansion, especially at the upper elementary and adult education levels, gives highest priority to the improvement of educational quality.

> "Though considerable attention is being placed on quantitative expansion during the third five-year plan period, much greater emphasis than in the past will be put on improving the efficiency, quality, and relevance of the educational system at all levels." (1)

Listed below is a verbatim summary of the educational objectives of The Third Five-Year Plan along with an abbreviated notation indicating the extent to which this project addresses each objective.

---

(1) Ministry of Education, Foreign Loan and Grant Requirements of the Ministry of Education during the Third Five-Year Plan Period, 1972-1976, 1971, p. 1.

Educational Objective[1]	Extent to which Project Addresses Objective
1- "To develop the educational system so that it will play the maximum role in social and economic development of the country.	Major attention
2- "To expand lower elementary education to cater for the growth in school age population, and to expand upper elementary enrollments as rapidly as possible so that universal compulsory seven-year education can be achieved by the late 1980's.	Minor attention
3- "To expand secondary and higher education, particularly in the fields of medicine, technology and teacher education so that the country's future manpower requirements are met.	Minor attention
4- "To increase the efficiency of all levels of education by reducing repeater, drop-out and failure rates.	Major attention
5- "To improve and diversify curriculum at all levels, particularly in rural areas, so that what is learnt is more directly applicable to the future lives the children will live. It is desired that secondary education courses should provide students with a general academic background, whilst at the same time preparing them either for further education courses, or for their future vocation.	Major attention with emphasis on elementary education
6- "To improve the qualification structure of the teaching force at all levels.	Major attention
7- "To expand and improve education for rural development in order to attempt to lessen the wide disparities of incomes between the rural and urban areas, and the agricultural and industrial sectors.	Major attention
8- "To expand nonformal education rapidly in accordance with the concept of life-long education."	Moderate attention

(1) Ibid., p. 2

To meet these stated objectives in the present Five-Year Plan, the Ministry of Education is seeking foreign loans for eight (8) project proposals, and grants for forty-three (43) more for a grand total of fifty-one (51).[1] It is significant to note that the comprehensive, multi-dimensional project described in this volume gives major attention to eighteen (18) of these separate proposals, and moderate to minor attention to four (4) additional ones for a total of twenty-two (22), or almost half the total number of all Ministry proposals seeking external assistance, 1972-1976.

D. Educational Problem Areas

Problems can be a source of frustration or a source of stimulation. They can serve as a launching pad for corrective action or a terminal of disgust and disarray. This project aims to utilize critical problem areas as triggering devices to initiate urgent and constructive reform.

Specific problems confronting the Thai educational system are presented over and over again in the resource documents listed earlier in this section. They are also described in various conference reports, speeches and written statements by educational officials, and a variety of research and investigative studies. They are spelled out most eloquently, however, in first-hand field visits to rural schools, and in direct, face-to-face discussions with teachers, supervisors, and

(1) Ibid., pp. 18-98.

administrators working in remote areas.

Sketched below is a representative overview of a majority of the major educational problems facing Thailand today. The list is certainly not all-inclusive; it particularly focuses on the problems that are the chief targets of this project.

Summary Description of Educational Problem Areas

1. Youth and Adult Learners

Quantity Considerations

- During the Third Plan, increase the number of students by 2,200,000 (a 5.9% increase per year) for a national enrollment total of 8,900,000 by the end of 1976.
- Universalize elementary education for Prathom 1-4, especially in remote areas, with particular emphasis on reducing dropouts and increasing opportunities for educational access.

  (19% enrollment increase planned during The Third Five-Year Plan.)

- Expand enrollments from current 30 to 35 percent level for Prathom 5-7 to 100% over the next 50 to 60 years.

  (67% enrollment increase planned during the Third Five-Year Plan.)

- Increase educational opportunities for adults (6,000,000 to 12,000,000 -- or 17% to 34% functionally illiterate) and out-of-school youth (1,708,000 or 66% of youth between ages 11-13 not enrolled in school).

  (185% increase planned during The Third Five-Year Plan.)

Quality Considerations

- Of the children who start Prathom 1, 19% fail to complete Prathom 4.
- The repetition rate for Prathom 1 is 26%; the dropout rate is 5%, for Prathom 2, the repetition rate is 16% with the vast majority of repeaters and dropouts coming from rural areas.
- Forty percent (40%) of the students completing Prathom 4 cannot be considered functionally literate.
- The national mean for repeaters, Prathom 1-4, is approximated at 31%.
- Wastage in the form of elementary school dropouts and repeaters involves an estimated cost of 289 million baht annually (figures are for 1971).
- Officially, there are 6,000,000 adult illiterates (17% of total population) in the nation; unofficial estimates are more than twice this number (34% of total population).

Opportunity Considerations

- Per pupil recurrent costs in urban schools are at least 50% higher than for the country as a whole.
- School attendance rates for a variety of socio-economic reasons are much lower in rural than in urban areas.
- Over 80% of the people live and work in rural areas, yet only 8% of postgraduate students come from farming families.
- Attrition rates between Prathom 4 and 5 (70% nationally) and between Prathom 7 and M.S. 1 (90% nationally) are much higher for rural children than for those from urban centers.
- Teacher qualifications, specialized equipment, school facilities, instructional materials, availability of supervisors and specialists, school enrollment size with its implications for quality education, and environmental richness and resources, with few exceptions, are considerably higher or better in urban schools as opposed to rural ones.
- Per pupil costs per annum are considerably higher in urban areas than in rural ones where the bulk of the nation's children live.

2. Teaching Staff

Quantity Considerations

- Increase numbers of both certificate and degree level teachers.

(93% increase planned during five year plan at College of Education; 55% increase planned for all types of teacher training institutions.)

- Expand postgraduate programs in education, at Master's and Doctoral levels, at the College of Education and its seven branches.

  (73% enrollment increase planned during Five-Year Plan.)

Quality Considerations

- Employed during 1971 in the elementary schools were 46,450 uncertified teachers (22% of total elementary teachers).
- Sixty-two percent (62%) of the nation's elementary teachers in 1972 possess a Lower Teaching Certificate or equivalent. Only 15% hold a Higher Certificate, and less than 1% a Bachelor's degree. All these teachers, regardless of type of certificate or degree, require periodic inservice training if they are to keep abreast of the times and professionally updated.
- In 1972 at the nation's 29 teachers colleges, where most of the teachers are trained, 17% of the teacher trainers were still non-degree certificate holders, 72% were only at the B.A. or B.S. level, 10% at the Master's level, and less than 1% at the Doctoral level.

- The vast majority of teacher trainers at the teachers colleges are only recent recipients of the Bachelor's degree, and as such are relatively inexperienced professionally. In addition, they are not adequately trained for positions as teacher trainers. They possess only two years of formal education beyond that of many of the students whom they teach.

Geographic Distribution Considerations

- The number of available qualified teachers is considerably lower in rural and remote areas than in towns and urban communities.
- Teacher professional qualifications, salaries, welfare benefits, and attendance are considerably lower in rural vis-a-vis urban areas.
- Supervisors and specialists, instructional materials, and opportunities for enriched learning experiences are fewer in number and/or lower in quality in rural as opposed to urban centers.

3. Curriculum and Instruction

Content Considerations

- Much of the content children study is irrelevant and non-useful. It is poorly related to the environment, language, religion, and traditions of the local area.

- Emphasis in the curriculum, especially at the adult education level, does not focus adequately on social and economic needs (e.g., job opportunities, health education), the individual's and the nation's number one priority.
- Curriculum content in more than a decade has not been comprehensively reviewed, refined, and updated in terms of the accelerating knowledge explosion and the step-up in the nature and pace of change. Consequently, new subjects and data (e.g., population education, rural economics) are still not included in the curriculum while outmoded and marginally useful information is still presented.
- The curriculum, generally speaking, is a standardized, one-track system designed to prepare students for higher study even though the vast majority will terminate their education at the end of Prathom 4 or 7.

Methodology Considerations

- Classroom method, in too many cases, consists of wholesale talking by the teacher with students passively listening, taking notes, memorizing, "passing" tests, and forgetting. Such rote exercise produces little permanent learning or behavioral change; rather it promotes boredom, slack

attendance, and a giant waste of money, time, and human resources.

- Teaching method capitalizes only minimally on the latest findings of learning theory and practice with their stress on individual motivation, discovery approaches, reinforcement measures, problem-solving and decision-making techniques, critical thinking, and emphasis on creativity, involvement, and interaction.
- Methods of instruction focus too strongly on the passing of tests rather than on the mastery of learning and practical skills.
- Teaching methods and materials have tended to emphasize the cognitive (intellectual) aspect of learning, and to give much less consideration to the affective and psychomotor aspects which deal with the highly significant dimensions of attitudes and mind-body coordination respectively.

4. Instructional Materials

Quantity Considerations

- A severe shortage exists in both low-cost and modern instructional materials and media at the elementary school, teacher training institution, and adult education levels, especially in rural areas.

- The most serious shortage is for up-to-date, soundly designed, skillfully illustrated, and low-cost textbooks and teachers' guides.
- For adults and out-of-school youth there is a real scarcity of high interest-low readability materials related to individual economic and social well-being.

Quality Considerations

- For the most part, textbooks and other instructional materials have not kept abreast of the recent revolution in educational technology (both in hardware and software) in terms of content, illustrations, conceptual and production design, format, utilization, and suggested supplementary learning activities.
- Even though individuals learn most effectively through the sensory experience of visualization, a considerable amount of learning activity resorts predominently on the sense of sound -- "chalk and talk" -- with often unimpressive results. Little productive use -- generally because of lack of funds or training -- is being made of visual media such as the over-head projector, 8mm. film, 35mm. slides, and video tape in improving teaching-learning process.

- Audio-visual equipment (hardware) which is available, is being under-utilized because of lack of effective maintenance, shortage of specialized personnel with adequate skills related to specific use and application, excessive operational costs, and a minimum of relevant software (e.g., tapes for the sound laboratories, transparency masters for the overhead projector, video tape or appropriate live programming for closed or commercial television).
- Only negligible use, often because of lack of funds and/or trained personnel, is being made of the case study method, programmed learning (or some adaptation of it), and mass media (radio, television, and the press) in the instructional process. Mass media, in particular, can serve as powerful instruments in both promoting and achieving national educational objectives if properly coordinated with program planning and implementation.
- Current tests and examinations in many cases are factually oriented and culturally biased, favoring urban youth or those coming from rich or educated homes. Furthermore, such tests are basically evaluative in nature, designed to measure cognitive learning as a prerequisite for grading, promotion, and scholarship assistance. All too often they are used as

an artificial motivator for study and hard work. Tests and other analytical instruments (e.g., case study profiles, personality inventories) that can be especially useful in diagnosing student learning difficulties are rarely used.

5. Leadership and Supervision

Quantity Considerations

- At all educational levels, beginning with the rural village, the Amphoe, the Changwat, and eventually the central Ministry offices in the capital, more administrators and supervisors, with more effective training, are needed to cope with an educational system growing rapidly both in numbers and complexity.
- As education becomes increasingly complicated and specialized, more and better trained specialists are needed to provide practical consultative advice and/or demonstrations and teaching in such fields as micro teaching, sensitivity training, group dynamics and interaction, supervisory concepts and techniques, administrative staffing studies, the development of VAL (video-audio-lingual) materials for study of a foreign language, methods in small and large group instruction, management strategies, processes for improving decision-making, and methods for the systematic

collection, interpretation, utilization, and evaluation of data.

Quality Considerations

- Since most of the nation's teachers work in rural areas where administrators, supervisors, and specialists are seldom available, and since they inevitably will be faced with situations generally handled by these specialists, they badly need varying degrees of preservice and inservice exposure to practical courses, problems, and techniques in educational administration, teaching supervision, and guidance and counseling.
- Short-term workshops, seminars, and formal academic courses, the latter leading principally to advanced diplomas or degrees, in the fields of educational administration, supervision, and guidance need to be expanded and improved at both preservice and inservice levels.
- While administrators and educational specialists at the university, college, and Changwat and Amphoe office levels require sound theory and concepts, they especially need specific skills and practices which are essential in their daily face-to-face contacts with teachers, parents, and school authorities.

- Administrators and supervisors are too few in number to handle effectively the responsibility for large numbers of schools (with all their teachers, students, and parents) and great expanses of territory.
- Effective leadership requires more thorough and systematic planning, data-collection and use, intra- and inter-departmental coordination, and concerted cooperation between administrators in the field and central office personnel in the capital.

6. Physical Facilities and Equipment

Quantity Considerations

- More and better educational equipment, suited to local conditions and budgets, is needed in elementary schools and teacher training institutions to keep pace with the necessities of curriculum reform, especially in the fields of science, arts and crafts, agriculture and practical arts. The last two fields, which should be taught as exploratory rather than technical, highly specialized experiences, apply basically to the upper elementary grades, Prathom 5-7.
- Seven new teacher training colleges, including appropriate fixed and movable equipment, are needed in various rural areas of the nation to cope with the need for more and better

teachers primarily at the elementary school level.

- Elementary demonstration schools, an integral part of an effective teacher training program, are required at each of the planned new colleges as well as at existing colleges which are still without them.
- Additional elementary classrooms are needed to handle expanding student enrollments particularly for the upper elementary grades.
- Equipment and materials are needed for inexpensive production and reproduction of a variety of audio, visual, and graphic arts presentations, textbooks, and other learning materials that are certain to accompany curriculum reform. The central goal here is maximum dissemination of relevant learning materials at minimum cost.
- Building facilities and equipment are required for the construction of a comprehensive curriculum development and research center to create, revise, test, evaluate, and produce curriculum materials in a broad spectrum of academic disciplines.

Quality Considerations

- In the planning of new physical facilities, such as the seven proposed teachers colleges and a national curriculum development and technology center, serious study and consideration

should be given to the many innovative and sensible changes that have taken place during the past decade around the globe in the design, construction, and use of learning space. The central aim of school building modernization must be threefold: greater function, better economy, and more imaginative aesthetics.

- To maximize learning results of specialized equipment already in the schools and colleges, such as television and sound laboratories, more emphasis must be given to participant training and the use of specialists.
- As new elementary schools are being built, renovated, or expanded (to handle more students or additional grade levels), even when accomplished mostly through local self-help projects, new emphasis must be given to the size and design of learning spaces so that they make possible and encourage teacher and student activities called for in the latest curriculum syllabi. New facilities, unfortunately, are too often mere replicas of old ones which in many ways have their limitations.

7. Budgeting and Finance

Quantity and Quality Considerations

- At the elementary level per pupil cost ranges, generally

considered a significant factor related to quality of learning, as wide as 1 to 6.

- Recurrent operation costs, particularly influenced by teacher salaries, are rising steadily each year. At the same time, school enrollments are growing faster than both national income and a consistently high rate of population growth.
- In Changwat Administrative Organizations (CAO) elementary schools, which comprise 82% of all elementary schools in the nation, implementation of the current Five-Year Plan for growth in enrollments, primarily in grades 5, 6, and 7, will result in a 52% increase in the total educational budget for CAO schools by 1976. (1)
- Vast disparities in Changwat revenues (as much as 200 to 1) contribute greatly to the reinforcement and spread of elitism on the one hand and to unequal educational opportunities and to hopes of utilizing the schools as a major instrument for shaping a more egalitarian society on the other. (2)

(1) Frank Farner, Project to Improve School Finance Practices in Thailand, First Quarterly Report, 1972, pp. 34-35.

(2) Frank Farner, Project to Improve School Finance Practices in Thailand, Second Quarterly Report, 1972, pp. 19-20.

- Over 96% of the rural elementary school budget is allocated for teacher salaries, supporting services, and welfare benefits. Thus, only 4% is available for instructional materials, equipment, and repair and maintenance services.
- There is dire need for the systematic and expeditious collection of essential data, and for trained personnel to interpret and utilize such data in an improved process of decision-making and policy determination.

8. Innovation, Experimentation, Evaluation, and Research

Quantity and Quality Considerations

Education in Thailand sorely requires research in every area and at every level. In fact, research in some form is essential for the survival, let alone the progress, of almost any institution. However, the nature, form, and direction of research must often vary widely from nation to nation, or institution to institution, depending on its stage of development, its resources, its priorities and goals. Too often in Thailand research activity has fallen far short of fulfilling its potential for a variety of reasons.[1] Some of the major ones follow:

(1) William P. Fuller, Research for Education Planning in Thailand: Comments and Suggestions for the National Education Council, Ford Foundation, Bangkok, 1972.

- It has been poorly coordinated, thus inviting duplication of effort on the one hand, and discouraging the mobilization of resources and the sharing of findings on the other;
- It has been too narrow, focusing too often on hair-splitting topics related primarily to university degree requirements or the researcher's idiosyncratic interests rather than national needs and objectives;[1]
- It has been too largely a paper exercise dealing with highly theoretical and esoteric matters, and too little a program of action research designed to improve programs, policies, and people;
- It has centered too fully on urban problems and too peripherally on upgrading life in the rural area;
- It has been too fragmentary, too diffused, too limited in scope and depth, and too ambiguous and inconclusive to be practical and useful;
- It has not made effective use of the almost inexhaustible supply of research from other cultures that, with discerning selection and adaptation, could have impressive positive effect here;

(1) Edward J. Kelly, Henry J. Hermanowicz, and Herbert A. Smith, Teacher Education in Thailand: Problems and Prospects, USOM, Greeley, Colorado, 1971, pp. 96-97.

- It has not focused adequately on an evaluation of existing programs and practices as starting points for deeper study;
- It has been too subjective and descriptive and not sufficiently objective and analytical;
- It has generally taken the form of survey studies rather than experimental activities and pilot projects; and
- It has too often been packaged in forms that are too bulky, bland, and confusing to be very useful to busy decision-makers and administrative leaders.

In order to maximize limited and increasingly harder-to-come-by monetary resources, relevant, well planned, and action-related research is needed. A few specific areas requiring such research are:

- Failure and inefficient learning, especially at the elementary school level;
- Tailoring the curriculum to contribute more productively to rural income and social needs;
- The advantages and disadvantages of the current 7-5 organizational plan -- and possible alternatives;
- Programs, activities, and methods useful in improving leadership behavior; and

- New concepts, specifications, schematics, and drawings for building better, more functional schools.

The worldwide knowledge explosion has brought with it an era of intensive specialization. To reap reasonable benefits from future action and applied research, therefore, research must be conducted as a team rather than an individual effort; it should, if possible, be related to on-going programs and innovative pilot projects; it should focus on results that are fairly immediate; and it should directly involve in a research role, possibly on a part-time basis, individuals who are related to and responsible for the activity under study.

The nation's research capability must be improved; more and better trained researchers are needed at all educational levels from the program planner to the classroom teacher. Depending on the individual's role, naturally, the length and nature of training will vary.

Research must become more practical and productive. As such it will become more respectable, and with respectability there will most likely come increased budgetary allocations.

E. Of Numbers and Navigation

The problem areas just presented may appear unduly imposing and far-flung. In reality they are. But careful study should demonstrate that they also are inextricably interrelated. The project objectives of

the next section, as well as the implementation features to be described in successive sections, present a specific plan for confronting these problems in a unified and simultaneous, as opposed to a fragmentary and sequential, manner.

One further word concerning the problems presented: some were substantiated by use of numerical data; others by descriptive narrative. Both seem quite valid. Certain activities lend themselves best to the language of numbers; others to words. And, despite appearances, verbal description, depending on source and reliability, can be every bit as honorable and valid as statistics and numbers -- and maybe more so.

Some fascinating insights related to the game of numbers were expressed in a Time magazine essay, "Of Imaginary Numbers", a year ago. A few quotes:

> "... Imaginary numbers, according to mathematicians, are useful in figuring out such problems as the flow of air or water past a curved surface like an airplane wing.
>
> "In ordinary life, imaginary numbers of a somewhat different kind seem to have become even more useful. From solemn public officials and eager corporations, from newspapers, television (and even, some dare say, from newsmagazines) comes a googol of seemingly definitive and unarguable statistics. They tell us, with an exactitude that appears magical, the number of heroin addicts in New York and the population of the world. By simulating reality, they assure us that facts are facts, and that life can be understood, put in order, perhaps even mastered. ...

> "In almost any area of life today, the best -- certainly the most honest -- answer to a request for figures would be: Nobody knows. But that makes us feel that somebody has failed at his job; there must be a right answer, therefore a right answer is composed. . . .
>
> "If every statistic were regarded with (similar) skepticism, it might well be found that many of our most widely accepted figures are also, at least in part, imaginary numbers. . . .
>
> "Is nothing, then, to be believed? Yes -- the evidence of the senses and the observations of the mind, but not too many of the imaginary numbers that try to provide proof. How many is "not too many"? The computer is working on that." (1)

Admittedly, therefore, data utilized to confirm and reinforce problem areas, in a true sense, represent approximations. Reinforced, however, with daily observations and sensory experiences that are vivid, repetitive, and pervasive, such data take on meaning far beyond mere quantification; they tell a story not only of "How much?" or "How many?", but also of "With what feeling?" "With what effect?" and "For what purpose?"

The real aim, of course, of utilizing numbers, feelings, and observations is to present a picture that is reasonably valid and true. The data cited in this proposal do that; they highlight problems that are real, imminent, and vast. They point the way for projects that purport to help the nation -- even if not in the most refined and precise

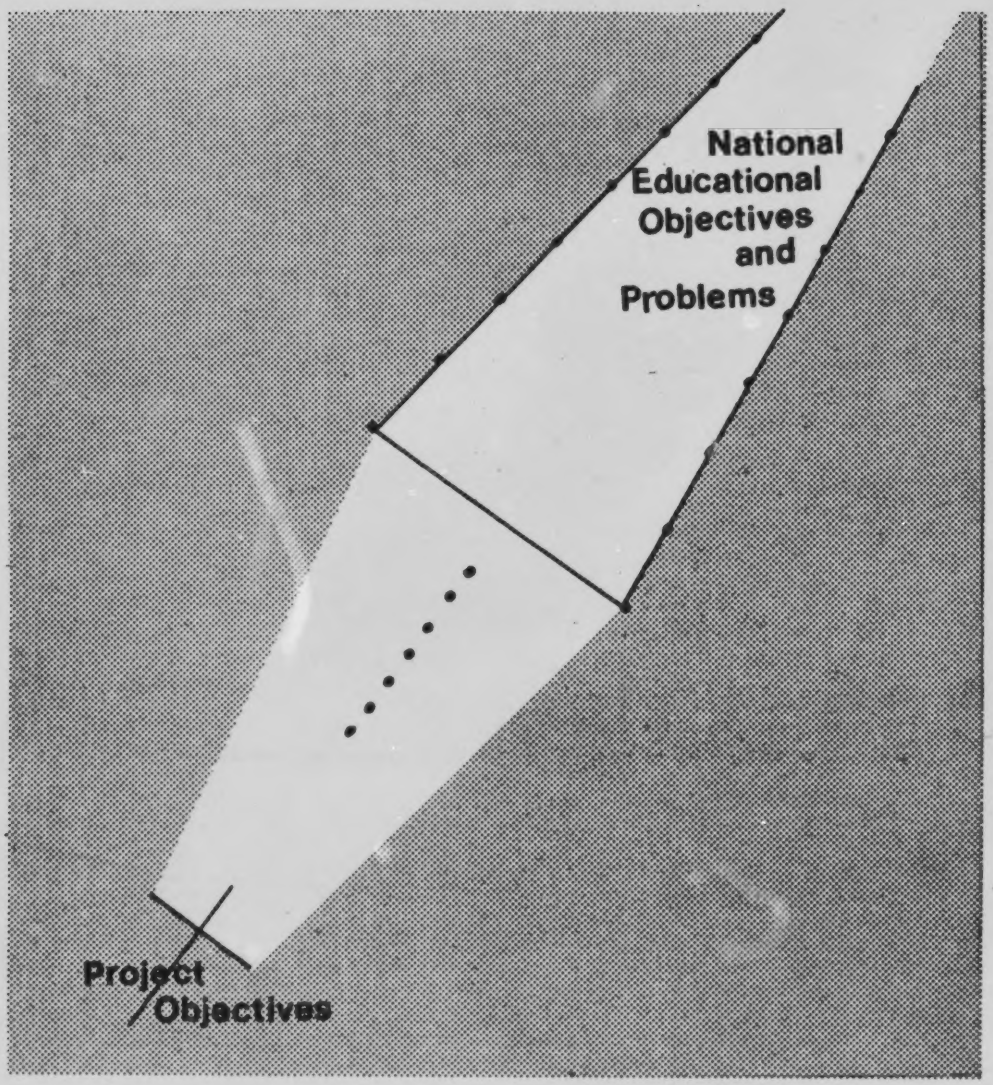
(1) Otto Friedrich, Time, August 2, 1971.

way. But then the navigator, in setting the automatic pilot on his sleek Boeing 707 shortly after take-off from Don Muang Airport, points his compass only in the general direction of Bombay's International Airport. On the basis of speed, altitude, and wind and temperature forecasts, he has enough "data" (none of which is totally correct) to get the flight started. Intermittent radar, radio, celestial, or pilotage readings will necessitate speed, bearing, and possibly altitude changes, to bring the plane to its destination at the stated ETA (estimated time of arrival). The longer the plane remains in flight, the more refined will be the course corrections. Certainly, no one on the crew, while still over the Indian Ocean, will be thinking about lining up the plane's nose with the Bombay runway. (See Schematic F.)

And so, too, with data and even with project design; we need enough of the right kind of information and structure to establish from the start sensible and attainable objectives, and plans and programs for achieving them. With time, changes and refinements will surely come. The unexpected and unplanned for will happen. New and better data, along with sharper and more perceptive observations, will surface. If project design, however, is flexible and dynamic rather than rigid and static, it will utilize all these new inputs to forge an educational instrumentality that is ever sensitive to inevitable change -- and perhaps more important, responsive to it.

F. SCHEMATIC: PROJECT DIRECTION

... A MATTER OF LINING UP



1 50 blank

Section III

PROJECT OBJECTIVES

A. Objectives: What the Project Aims to Do

This project aims to contribute to the achievement of national educational objectives and, at the same time, to the alleviation of national educational problems, both discussed in the preceding section. It plans such achievement through the establishment of a regional educational action research and development center to be located in the rural sector and to be directed to the accomplishment of the following objectives:

1. Curriculum and Instructional Materials

(a) To reform and modernize on a pilot scale the entire elementary school curriculum (both content and methodology), covering all subject areas that should be taught, particularly in rural areas, to students in Prathom 1 to 7, and, in a lesser degree, to young children at the kindergarten and preschool level. Emphasis must be placed on making the curriculum more relevant to the Thai culture and to the needs of people living in an agricultural economy;

(b) To prepare, write, field test, produce, distribute, and utilize, in a selected rural pilot area, elementary school (Preschool plus Prathom 1-7) textbooks and teachers' guides in the curricular areas of language arts (Thai), English as a second language, social studies (including

culture and religion), mathematics, science, health and physical education, arts and crafts, music, and practical arts for both boys and girls;

(c) To design, develop, field test, produce, distribute, and utilize instructional materials, both low-cost locally-made items and modern multi-media, to enhance the teaching-learning effectiveness of the newly written textbooks which will serve as the foundation for implementing the revised elementary education curriculum;

(d) To study the growth and development of preschool rural children, in the approximate age range of 3-6, and to make recommendations to the project Central Coordinating Committee (CCC -- to be described later) concerning activities, materials, and approaches that can make these most impressionable years more fruitful;

(e) To establish an efficient and competent indigenous capability for continuous curriculum, textbook, and instructional materials reform and improvement through the (1) training of a cadre of local curriculum and media specialists, textbook writers, illustrators, and translators; (2) adoption of an organizational and procedural approach dealing with all functions of curriculum development from content selection to field implementation; and (3) creation of a permanent regional instructional materials center to serve the special educational needs of the surrounding rural area (Additional information on this center is presented

in the objective below.);

(f) To create a model regional Instructional Materials Center (IMC) to study, select, test, evaluate, design, and produce a wide variety of locally-made and modern technological media and materials (including radio and television as well as those indicated in the objectives above) that are reasonable in cost and that are relevant to the lives of learners from the preschool to adult level in rural Thailand. The IMC would be a component part of the total educational action research and development complex; it would coordinate its efforts most closely with curriculum workers and textbook writers in the field; and it would serve as a rural extension arm of the Department of Educational Techniques. The model center hopefully would serve as a prototype for the establishment of other regional centers in a process of decentralization designed (1) to increase local involvement and responsibility; (2) to develop curricular programs and materials more consistent with the special characteristics of a particular region; and (3) to serve as a rural experimental and implementation agency for the Ministries of Education and Interior in Bangkok; and

(g) To design, develop, field test, produce, distribute, and utilize testing instruments, both diagnostic and evaluative in nature, correlated to the new textbooks and teachers' guides which will be written for each subject matter area in the elementary school

curriculum. In addition, a list of recommendations should be submitted to the CCC bearing on testing reform required to satisfy more effectively a variety of educational needs such as entrance screening for higher education, diagnosing specific areas of learning difficulty, etc.

2. Teacher Education: Preservice and Inservice

(a) To utilize on a pilot scale the new teachers' guides and correlated tests and instructional materials, referred to in the preceding objective on curriculum and instructional materials, as major (but not exclusive) source materials for revising and modernizing the content and methodology of the preservice elementary teacher training curriculum at the university, college of education, and teachers college located within the proximity of the rural regional educational center,

(b) To sponsor workshops, conduct demonstrations, develop supplementary materials, and provide consultative services at the above-named teacher training institutions to improve the knowledge, skills, and understandings of teacher trainers and teachers of teacher trainers;

(c) To create a model regional Inservice Education Center (IEC) that will promote in philosophy and action the idea that life-long education is absolutely indispensable for all teachers who hope to keep up to date with our turbulent times. The center would make provision for the periodic re-cycling of all teachers, teacher trainers, trainers of teacher

trainers, supervisors, educational specialists, and administrators who live and work in the regional geographic area. The IEC, which would be a component part of the total Rural Education Development Complex (REDC), would (1) provide training experiences for practicing teachers in the region dealing directly with the use and underlying concepts of the newly designed elementary curriculum; (2) utilize the rich backgrounds of these veteran teachers in testing, refining, and evaluating the newly developed materials; (3) serve as a regional liaison professional training agency for MOE and MOI in testing and implementing curriculum changes and innovation, and in accelerating the pace of their national dispersion; (4) promote the systematic practice of holding year-round inservice programs in a rural setting and in facilities designed especially for the upgrading of older and more experienced teaching personnel; and (5) serve as a prototype for the establishment of similar regional centers throughout the nation, with the accent on decentralization of educational management and responsibility; and

(d) To promote teacher morale, job tenure, and productivity by (1) studying factors related to terms of service such as salaries, promotions, school and geographic assignments, incentives to compensate for hardship or security-related postings, etc.; and (2) making appropriate recommendations to the CCC in Bangkok.

3. Leadership and Supervision

(a) To improve the professional performance of educational and community administrators, leaders, and supervisors whose job responsibilities are closely related to project objectives and activities by involving them directly in (1) project planning, implementation, and evaluation; (2) seminars, workshops, internships and academic courses; (3) reality-based experiences, closely related to their jobs, that stress problem-solving and decision-making techniques; and (4) academic and field exercises that focus on the acquisition of specific skills related to organization, planning, data-collection and use, finance, staff relations, etc.;

(b) To provide the leadership experience described above in more intimate and intense fashion for a cadre of selected Thai leaders, living and working in the pilot area, who will serve as the Field Operations Unit (FOU). The FOU will be responsible for the day-to-day direction, planning, implementation, and evaluation of the project within the policy and organizational structure established by the CCC to whom it will report periodically;

(c) To develop Thai-related curricula, materials, and methods in the fields of educational administration, curriculum improvement, guidance and counseling, adult education, and community development, at the non-degree, Bachelor's, Master's and Doctoral levels, that will be

useful in upgrading the job performance of present and prospective educational and community leaders and supervisors;

(d) To study and assess current concepts and practices of supervision in the field, both at the practice teaching and inservice levels, to experiment with improved procedures -- especially ones that take account of the vast number of teachers to be visited and the relatively small number of supervisors available, and to make recommendations for reform to the CCC; and

(e) To examine and evaluate the effectiveness of the present organizational structure, relationships, policies, and procedures that exist between Ministry offices in Bangkok and provincial offices in the field, between Changwat offices and individual schools and colleges, between the teachers colleges and the university, between the schools and the community, etc. Efforts must be initiated, and recommendations submitted to the CCC, to improve educational administration at all levels and in all functions with special emphasis on the process of decentralization whereby broad policy determination and educational direction are strengthened at the national level, and responsibility for and participation in ongoing operational matters are entrusted to regional or local officials.

4. Adult and Nonformal Education

(a) To make an inventory of the instructional materials and

activities now available to out-of-school youth and adults, to assess their appropriateness and quality, and to make needed revisions and/or develop new materials and activities with particular focus on literacy attainment, topics of adult interest (e.g., population and health education), and socio-economic needs;

(b) To make recommendations to the CCC, in conjunction with the objective stated above, concerning curricular changes and materials, particularly suited to adult and nonformal education, that should be included as integral parts of the formal school program; and

(c) To broaden the training of teachers and teacher trainers by (1) inculcating the concept that all teachers are not only instructors of children but also of out-of-school youth and adults; and (2) including the skills, knowledge, and attitudes required for teaching older people in both formal and nonformal instructional activities.

5. Physical Facilities and Equipment

(a) To conduct workshops and seminars, and to offer formal courses, in school plant planning (including fixed and moveable equipment) directed to school administrators and community leaders, with the objective of (1) heightening their awareness that the way schools or colleges are designed and built has a most direct bearing on how teachers teach and how effectively learners learn; and (2) teaching them specific skills related to learning space conceptualization, design, construction,

utilization, and management;

(b) To involve directly selected educational administrators and leaders, as opportunities present themselves, in a close working relationship with school architects in writing forward-looking educational specifications for modernizing old physical facilities or designing new ones; also, to provide practical experiences in planning modern educational programs to accompany the new facilities; and

(c) To make recommendations to the CCC concerning policies and practices that are needed to make educational facilities and equipment more functional, aesthetic, and economical.

6. Innovation and Research

(a) To provide direct on-the-job training for educational leaders, writing teams, job interns, teacher trainers, and selected teacher trainees, who may be associated with the project, in the development of research skills, experimental materials, logical and systematic thinking, and interpretation and application of findings; the foci of the research, which will be basically of an action and applied nature, will be the five broad educational objectives described earlier in this section;

(b) To introduce, often from other nations, and apply here with appropriate adaptation the most promising innovations, techniques, and materials in selected specialized areas of education such as

sensitivity training, micro teaching, institutional evaluative criteria, small and large group instructional methods, visual-audio-lingual language study approaches, and the use of video tape in improving both teacher training and supervision;

(c) To explore and experiment with more effective ways of utilizing mass media (radio, television, and the press) more fully in meeting stated educational objectives;

(d) To develop research unit materials to be utilized at all levels of teacher training, but with varying degrees of complexity, to instruct trainees in the use of practical research skills in their every-day professional lives;

(e) To plan the development of a vastly expanded regional professional multi-media library which will be part of the IMC; the library will provide the professional books, films, tests, slides, transparencies, etc. for use by the curriculum writing teams, and will provide source documents and prototype materials for teachers, course designers, and educational innovators and researchers; and

(f) To promote as an integral feature of the total project a unified and well coordinated regional research capability bolstered by competent leadership, trained staff, adequate library, functional facilities, and supporting budget to ensure that current and future

innovative activities of the REDC will have a sound and permanent research base.

B. Resources, Demands, and the Twelve Camels

The project objectives just presented are sweeping in scope, yet interrelated in nature and function. They take cognizance of the fact that what people learn, and how well, is the essence of what is called the "curriculum", and that the curriculum will hardly change without concomitant and continuous change in preservice and inservice teacher training, instructional materials, leadership and supervision, facilities and equipment, and experimentation and research. Yet, all this is a large order. To do all things to all people at one and the same time is out of the question. Like the near-helpless camel driver who, lost and isolated with twelve thirsty camels and one barrel of water in the midst of an endless desert, decided to shoot eleven camels and try to make his way out with the remaining thirst-quenched one. Difficult decisions must be made. (See Schematic C.)

Limited resources, thinly spread, in whatever name, is almost always an exercise in futility. How, then, do such resources confront massive needs and make a difference? How, in other words, does one get the most mileage for his inputs? To be brief, even at the risk of over-simplification, focus will be directed to four sides:

1. The NUMBERS side:

First, it is essential to secure critical financial and demographic data that are current as well as projected several decades into the future. Planning surely requires some rough estimate of how many we are planning for, and how much money and other resources we are likely to have available. To the educational planner, the few figures and projections presented below are sobering and inescapable.

(a) Latest demographic data indicate that Thailand's population in 1972 was in excess of 38,600,000 people. At current rates of growth (estimates vary from 3.0% to 3.6% per year), the population will double (a 100% increase) in approximately twenty years.

(b) The school age population, covering ages 5-19, was about 14,000,000 in 1972; it is estimated that it will be in excess of 21,000,000 by the year 2000 (a 50% increase) on the most hopeful assumption that the national fertility rate will be halved in thirty years. Estimates based on current fertility rates for the same age group, 5-19, range in the order of 30,000,000 by the year 2000 (a 114% increase).

(c) Public spending for education increased from 1,550 million baht (14.5% of the central government budget) in 1963 to 6,042 million baht (19.1% of the central government budget) in 1973, an average increase of 14.6% per annum. At the same time, the Gross Domestic Product

increase has averaged between 9 and 10% per annum during the same time period. The percent of GDP allocated to public expenditures for education rose from 2.6% in 1963 to 3.5% in 1972.

(d) Inflation, price rises, and living costs averaged about 2% per year over the past decade. In terms of future projections, inflation can be expected to rise above current levels in the light of a variety of national and international economic developments that were transpiring during the latter months of 1972 and the early months of 1973.

(e) A trend toward plateauing in national expenditures for education seems to be developing during the course of the current five-year plan, hovering in the vicinity of 18 to 19 percent. In terms of the needs and demands of other competing sectors, it does not appear likely that national expenditures for education in the decades ahead will vary more than a couple of percentage points, more or less, from current levels.

(f) Disparities in cash income between urban and rural families, especially between families living in Bangkok and those living in the Northeast, are sizeable (average ratio of 5.6 to 1) and, despite GDP increases, continue to grow.[1] One result of such disparities is a rapid growth in rural emigration and a corresponding population growth in the

(1) Edgar C. Harrell, "The Employment Problem in Thailand", Office of Program, The United States Operations Mission to Thailand, Bangkok, September 1972.

Bangkok metropolitan area estimated to be in excess of six percent (6%) annually, double the national average.

2. The CONDITIONS side:

Planning productive national programs calls for more than critical data; underlying assumptions are also needed, and they are presented in Section IV that follows.

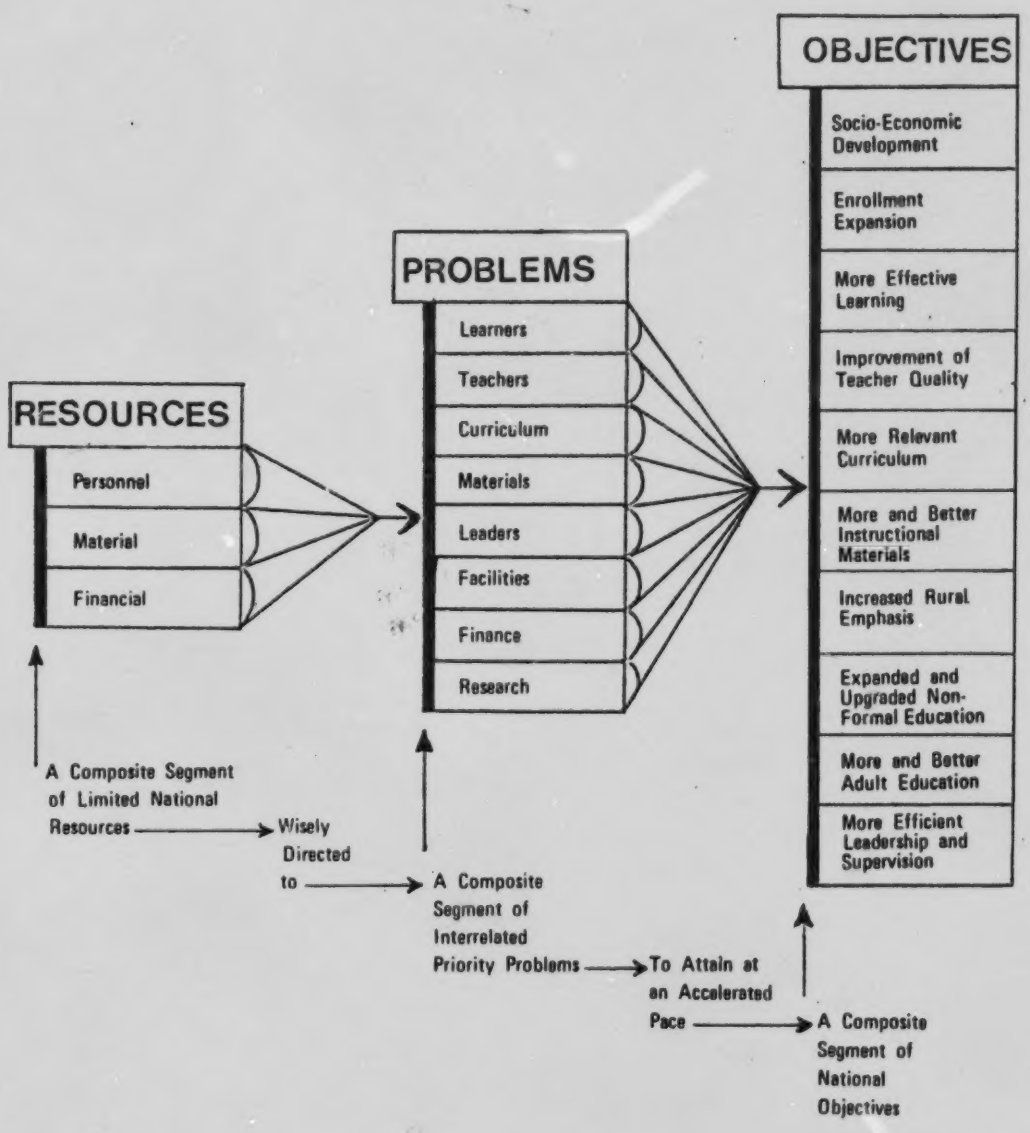
3. The VALUES and PRIORITIES side:

Facts, if they are valid and reliable, are basically non-debatable. Assumptions, however, along with concepts are debatable. They form the cornerstone of any action program, and they call for value judgments that unmistakably reveal what we perceive to be important -- and how important, what or who should come first, what is worth sacrificing for, and where and how our efforts and resources should be directed. Section V presents a series of concepts, involving values and priorities, which serves as a rationale for the project.

4. The ACTION side:

Section VI and the remaining chapters present a detailed description of a multi-dimensional project, founded on a series of stated assumptions and concepts, addressed to the achievement of educational objectives and the alleviation of educational problems, and designed to accelerate the pace of national socio-economic development.

C. SCHEMATIC: LIMITED RESOURCES CONFRONT MASSIVE NEEDS



Section IV

ASSUMPTIONS UNDERLYING THE PROJECT

To achieve the educational objectives described in the previous section, and to do so with a keen sensitivity to the ubiquity of limited national resources and mounting personal demands, calls for a set of basic assumptions. Such assumptions, coupled with a series of conceptual guidelines, determine the breadth and depth of the project's foundation which, in turn, determines the height to which the project can aspire.

A. Assumptions

1. It is assumed that the national educational objectives as stated in the Third Five-Year Economic and Social Development Plan are sensible, realistic, and deserving of urgent action.
2. It is assumed on the basis of the Five-Year Plan and the Annual Budget that education is considered one of the nation's most significant sectors whose effectiveness is inseparable from national development and progress.
3. It is assumed that relevant education, in its many forms, is indispensable to the preservation of cultural heritage, respect for royalty, tranquility and security, and the inculcation of religious and traditional values.

pp 70-72 blank

4. It is assumed that change is inevitable and inescapable, that education represents the nation's basic instrumentality for nurturing individuals who can effectively cope with it, and that the survival and growth of our society as a whole depend on how we help to shape as well as respond to it.

5. It is assumed that the pace of our national march toward a more participative democracy will be governed directly by the speed with which the educational process is able to produce an egalitarian society made up of independent-thinking, socially-responsible, self-directive, and mature individuals.

6. It is assumed that education must be diversified in form, content, and approach in order to be responsive to varied national manpower needs. It must help to develop more fully human resources at the professional and highly technical level, the middle manpower and semi-skill level, and the village agricultural level.

7. It is assumed that national progress requires the constructive contributions of all ministries, and that education, to be effective, must actively relate its planning and efforts to those of others. Of course, this assumes effective mobilization of resources and coordination of efforts within and among the various departments of the Ministry of Education itself.

8. It is assumed that education in its many dimensions must be

indigenous to the Thai culture. At the same time, it is assumed that education is made up of numerous universal characteristics that are common to many cultures; national educational development can be accelerated, more efficiently, by the discriminating selection, introduction, and adaptation of educational concepts, practices, and materials derived from other cultures.

9. It is assumed that despite remarkable progress in the broad field of education, especially during the last two decades, formidable problems and towering tasks remain; the successful confrontation of such problems and tasks calls for creative and innovative approaches beginning on a pilot basis, then serving as prototypes for national dispersion with provision for regional refinement and adaptation, and eventually leading to culturally-rooted institution-building.

10. It is assumed there is a real sense of urgency attached to upgrading the quality of education, particularly in rural areas, during the current Five-Year Plan. It is also assumed that improving quality is a most complex task that does not readily lend itself to crash schemes and fast answers. It is assumed further, therefore, that programs to raise quality deserve the highest priority in terms of timing and the commitment of resources, and should, from the start, be envisaged as long-term projects with progressively

accumulative pay-off.

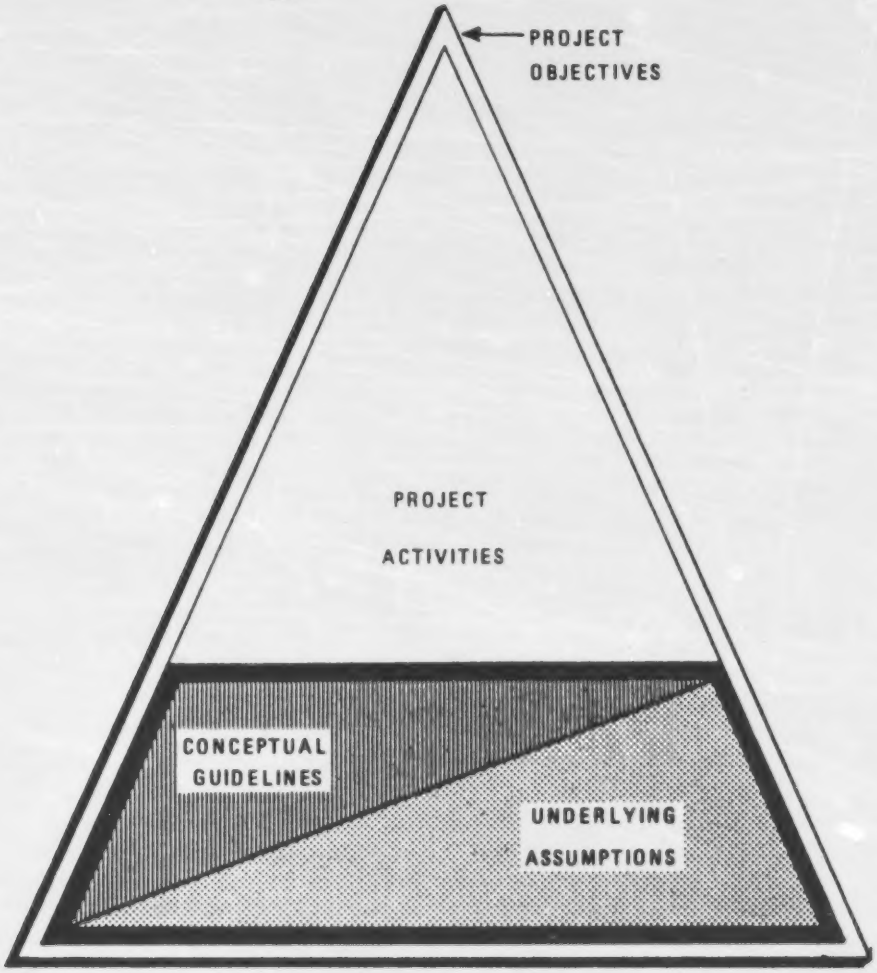
11. It is assumed that because of a burgeoning population, commitment to the democratic ethic, the values inherent in exercises of direct participation and involvement, the principle of keeping the decision-making process close to the people to be affected, and as a check and balance mechanism to the constant enlargement of bureaucracy, new approaches must be explored, and new efforts made to discover more efficient ways of decentralizing administrative responsibility matched by commensurate authority.

12. It is assumed that the RTG will commit national inputs consistent with the objectives desired, in terms of required funds, high quality personnel, and material to the project described in this document to ensure its successful launching and its long-term viability.

13. It is assumed that considerable assistance from other governments and external assistance agencies will be needed, especially during the early years of the project.

14. It is assumed that the conceptual guidelines presented in the next section, along with the assumptions cited here, provide a foundational framework for project structure and design. (See Schematic B.)

B. SCHEMATIC: THE HEIGHT OF A PINNACLE IS DETERMINED BY THE BREADTH OF THE BASE



Section V

CONCEPTUAL GUIDELINES AND SUPPORTING RATIONALE

The conceptual guidelines presented in this section are framed as a series of pointed and project-oriented assertions backed by supporting rationale. By clearly identifying priorities, emphases, and values they give the project sharper and more definite focus. Selected charts and illustrations are provided to dramatize more pronouncedly facts and figures that are deemed of consequence.

Creative, yet realistic, conceptualization is at the heart of any productive program. Project "packaging" is important, even essential; yet it is the realm of strategies and ideas that serves as the real creators and sustainers of effective action.

A. The Concepts

CONCEPT A: Elementary Education Priority

Elementary Education which is the basic and sole form of formal schooling for the vast majority of the nation's youth, and the foundational learning program for all students continuing to various forms of higher education, should receive the highest educational priority during the 1970s.

pp. 78-80 blank

Rationale

(a) Student Enrollments

In 1971, eighty-eight (88) out of every one-hundred (100) students enrolled in an educational institution, at all levels, were in an elementary school. (See Chart 1.)

(b) Teachers

In 1972, eighty-one percent (81%) of the nation's total supply of teachers were employed in elementary schools. (See Chart 2.)

(c) Schools

In 1972, there were over 29,000 elementary schools which amounted to 90-95% of all schools (secondary, technical, trade, business, college, and university) in the entire country.

(d) Costs

In 1972, the highest single line item in the national budget was for elementary education; it amounted to 2,747 million baht which was 9.5% of the total national budget, or 50% of the total educational budget. (See Chart 3.)

(e) Cost-effectiveness

A careful research study, conducted in Thailand in 1970, revealed that the highest cost-benefit ratio exists at the elementary level as opposed to other levels of education. (1)

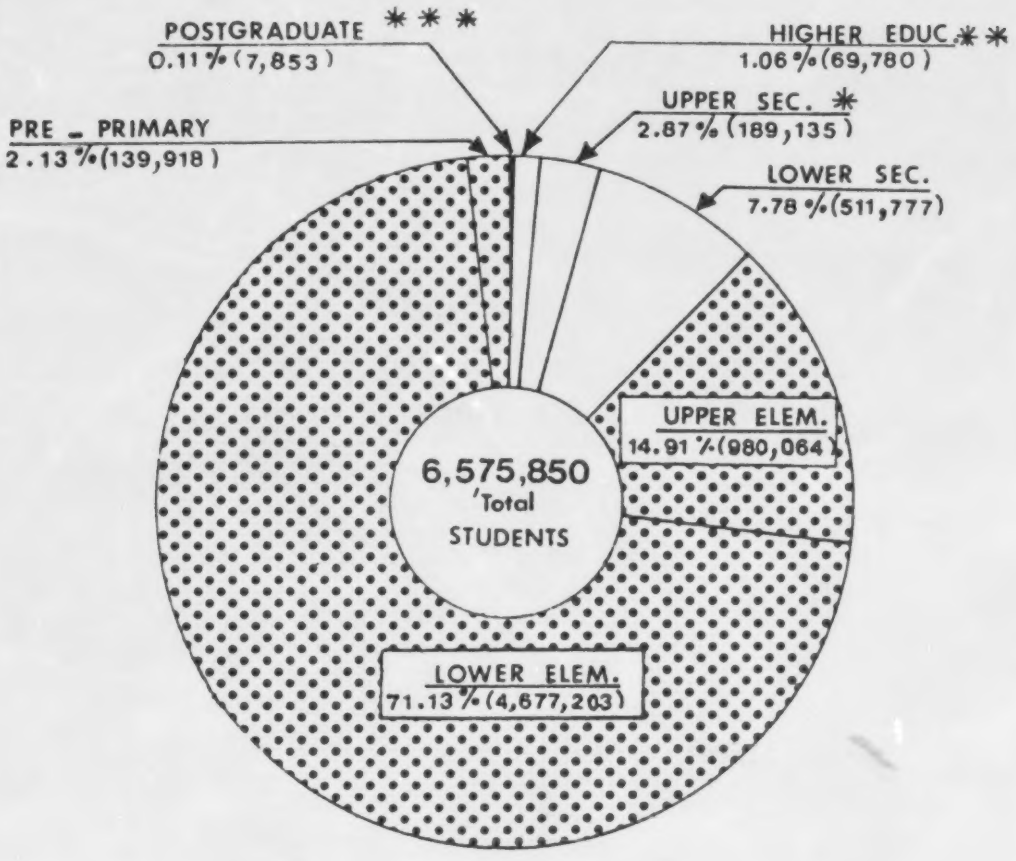
(1) Mark Blaug, The Rate of Return to Investment in Education in Thailand, The Ford Foundation, December 1971.

CHART 1

THAILAND

STUDENT ENROLLMENT DISTRIBUTION, 1971

(All Levels)



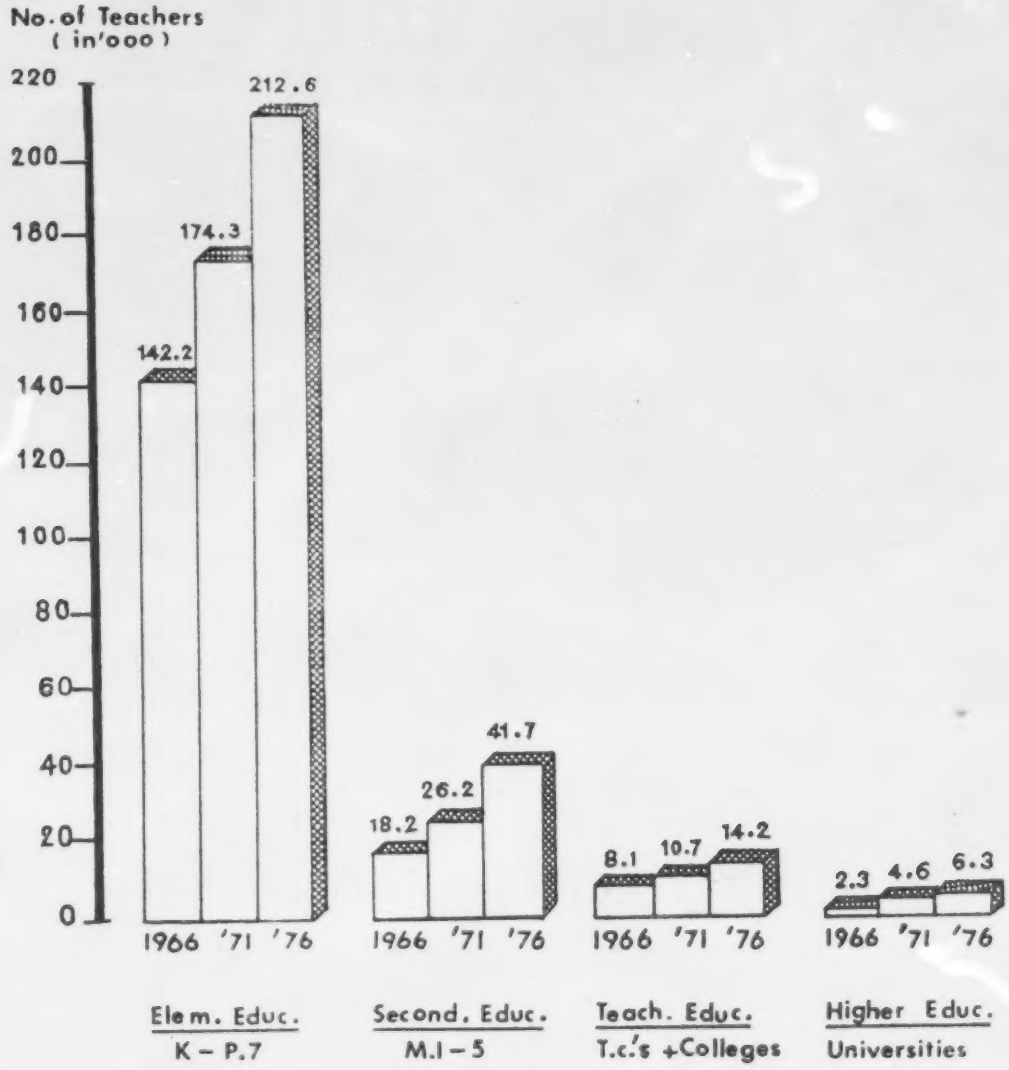
TEACHER EDUCATION:

		*	Includes	34,831	Teacher Trainees, Lower		Cert. Level
	*	*	"	14,795	"	" , Higher	Cert. & B.A. Level
*	*	*	"	5,721	"	"	M.A. Level

CHART 2

(THAILAND)

EDUCATIONAL STAFFING (all levels), 1972



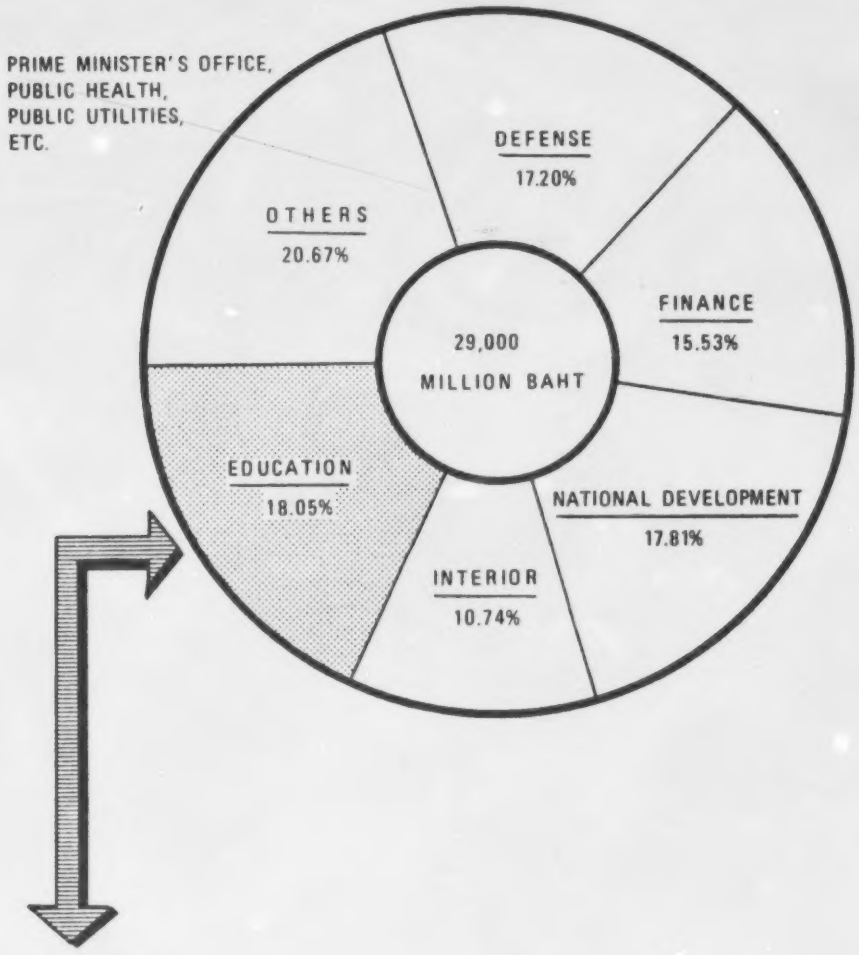
p. 84 blank

CHART 3

THAILAND

NATIONAL BUDGET - 1972

(in Percentages)



50% OF TOTAL EDUCATION BUDGET ALLOCATED TO ELEMENTARY EDUCATION

p. 86 blank

Dr. Boonsom Martin, Deputy Minister of Education, in a recent speech on "Education to Meet the Needs of a Changing Society", cited frankly some hard facts to bolster his plea for more learning effectiveness at the elementary school level, especially in rural regions.

> "Elementary education has recently been a topic of news to the effect that it is sustaining a wastage of 300-600 million baht yearly because of large numbers of repeaters, and because high percentages of children who have completed Prathom 4 in rural schools still lack literacy.... Children who have completed four years of elementary education and are still illiterate are usually those who come from rural schools which have insufficient learning materials because of parental poverty. An additional reason for this illiteracy is the tremendous work load imposed or the teacher who is expected to be able to teach efficiently six to eight subject areas. It should therefore be considered appropriate to invest an additional amount, beyond current spending (almost 3,000 million baht per annum), of 5,000-6,000 million baht yearly to provide instructional materials and supplies, equipment, textbooks, references, and libraries in these disadvantaged elementary schools to improve their quality. This new investment should also give high priority to the upgrading of teacher quality and the expansion of supervisory services."(1)

(f) Learning Results

One of the most prominent themes making its mark in the current educational world centers on the growing recognition of

(1) Boonsom Martin, "Education to Meet the Needs of a Changing Society", A paper presented to the Education Society of Thailand, Bangkok, February 15, 1973.

88 blank

the power and importance of learning potential during a child's early, formative years. In the United States today, preschool, kindergarten, and early childhood education, encouraged by nationally-financed "Head Start" programs and the nationally televised children's program "Sesame Street", is undergoing rapid growth and both intensive and extensive experimentation and development.

(g) A Learning Society

While a society's progress surely depends on a nucleus of highly trained manpower, it just as surely also depends on a broad base of citizens who possess (1) at least the rudimentary skills required for life-long learning (reading, writing, computing, thinking, planning, acting); (2) a political awareness related to governmental activities and procedures, especially as they apply to the local level; and (3) a social sensitivity to people, neighborliness, and mutual respect. Except for a few die-hard extremists in favor of completely de-schooling learning activities, almost all societies of the world are giving the highest priority to basic, elementary education for as many of their people, and for as many years, as their resources can afford.

(h) Centrality and Complexity

John Hanson in describing the school scene in Africa spared no words in highlighting the crucial and complex dimensions of elementary education. Much of what he writes has implications for Thailand.

"Discussions of education in Africa which fail to come to terms with the problems which confront primary schools are frivolous. It is the primary schools which consume by far the largest proportions of both education budgets and private or local contributions to education; it is the primary schools which serve over ninety-five percent of the school population in Africa; it is the primary schools which will provide the only formal education which most of the youngsters in Africa will possess; and it is the primary schools which provide the largest single market for wage employment of educated personnel in Africa.... Unfortunately, the past decade has seen more attention devoted to the problems of secondary and higher education, problems which are by comparison relatively easy problems to handle."(1)

CONCEPT B: Rural Focus

In any new educational project special emphasis should be directed to the rural sector where most of the nation's people work and live, and where striking disparities exist between their standard of living and that of their fellow countrymen living in urban centers.

Rationale

(a) Population and Employment

Eighty to eighty-five percent (80-85%) of the nation's

(1) John Hanson, op. cit., p.10.

population reside in rural areas and make their living through agriculture and agriculturally-related occupations. For the foreseeable future, Thailand will most likely remain basically an agrarian economy.

(b) Income Distribution

Per capita annual income averages about Baht 3,800 (US$190.) for rural inhabitants; average per capita income for city dwellers is estimated to be six times as great.

(c) Physical and Social Amenities

In terms of medical services (Half of Thailand's 3,500 registered doctors practice in Bangkok. The ratio of doctors to people in rural areas reaches as high as 1:70,000.), electrical and water facilities, quality schools, reasonably paved road, comfortable housing, and cultural and recreational opportunities, the advantages lie overwhelmingly on the urban side.

(d) Teacher Training Institutions

The key to more efficient learning is more highly qualified teachers, and the key to more highly qualified teachers is the effectiveness of teacher training programs and where they are located. Location is significant because even elementary logic dictates that a teachers college located in an urban area can hardly train in a meaningful way young teachers the skills and realities needed to work with children and adults living in remote villages. Yet, twenty-one (21) of forty-nine (49)

existing and proposed teacher training institutions are located within 125 miles of Bangkok. (See Chart 4.) The ten new teachers colleges proposed by the Ministry of Education for construction during the present Five-Year Plan will all be located in rural areas. Four of the ten were opened during 1972.

(e) Modernization and Change

Recent impressive research in developing countries indicates that formal schools have greater impact upon the formation of modern attitudes, such as an openness to new experiences like receptivity to ideas on family planning, disease prevention, scientific agriculture, and dietary importance, than any other contemporary institution.[1] The research emphasizes that even inadequate elementary schools fulfill, in varying degrees, this role of modernity and change-amenability although results are generally difficult to quantify, and for that reason are often overlooked.

CONCEPT C: Quality Stress

While student enrollment expansion and compulsory attendance extension are necessary and even vital, their importance and impact are measured directly by

(1) Alex Inkeles, "Participant Citizenship in Six Developing Countries", The American Political Science Review, Vol. 63, No. 4, December 1969, pp. 1120-1141.

the effectiveness of student learning, and that constitutes educational quality which should be constantly stressed in any new project.

Rationale

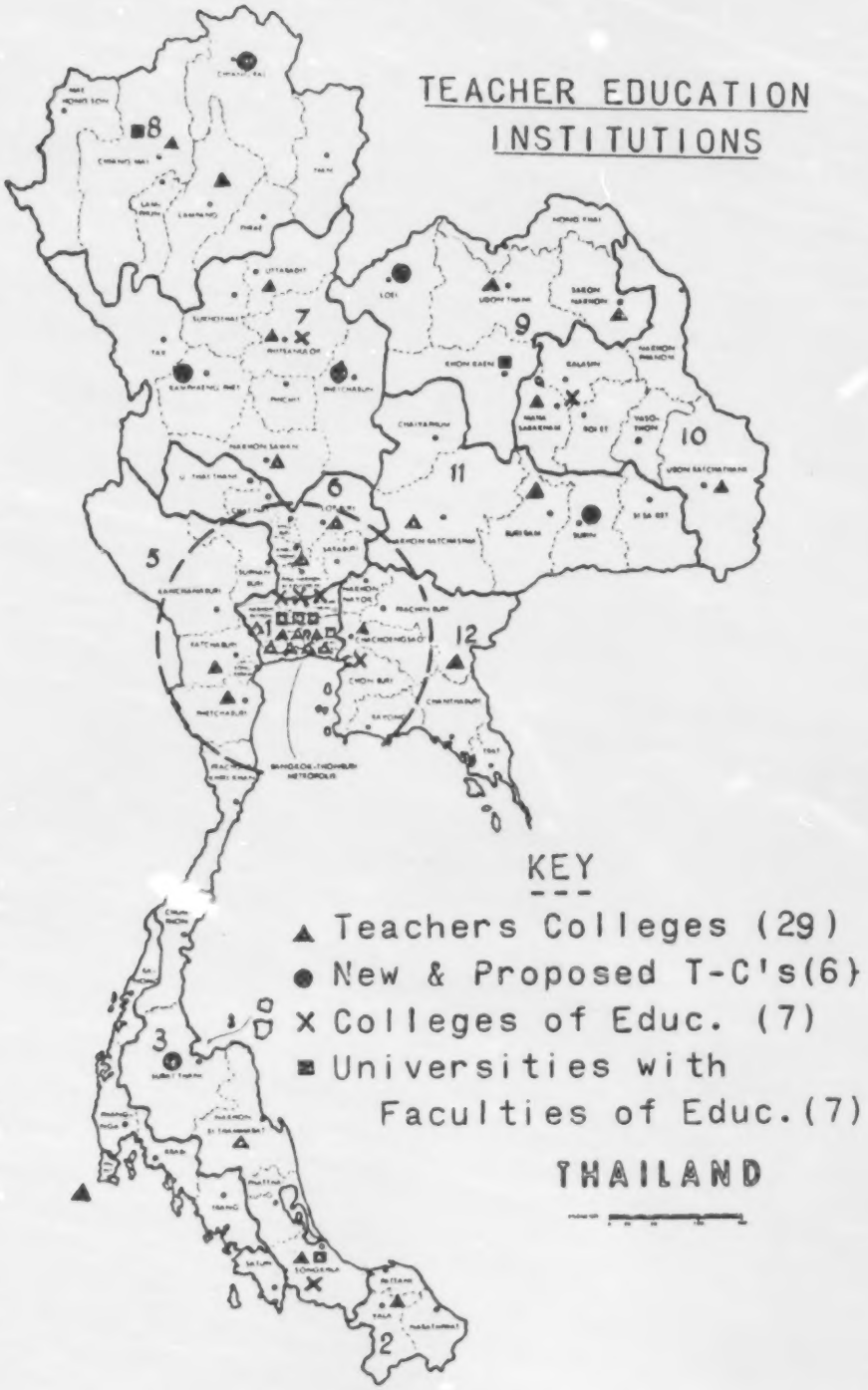
(a) Quantity-Quality Balance

The nation is rapidly approaching full, universal education at the lower elementary (Prathom 1-4) level, yet about sixty-five percent (65%), or two out of every three students, end up as dropouts, repeaters, or illiterates (the loss of the ability to read within about one year after leaving Prathom 4). Educational plans, now under way, call for eventual universal enrollment at the upper elementary level, Prathom 5-7, even though there is considerable uncertainty as to the curriculum and instructional materials that will be most appropriate.

(b) Costs

In 1971, the estimated public costs for dropouts and repeaters was close to 300 million baht. The costs for providing a minimum of four years of schooling for the 40% of lower elementary students who failed to read was certainly much higher. The expenditure of a considerable portion of the total elementary school budget was not yielding results commensurate with its potential because of qualitative deficiencies.

CHART 4


TEACHER EDUCATION INSTITUTIONS
KEY
▲ Teachers Colleges (29)
● New & Proposed T-C's(6)
x Colleges of Educ. (7)
■ Universities with Faculties of Educ.(7)
THAILAND

(c) Budget Commitments

In 1972, approximately ninety-six percent (96%) of the total expenditures for CAO schools was used for teacher salaries and welfare benefits; the other four percent (4%) went for operating expenses. (See Chart 5.) Because of financial shortages, there were practically no funds available for improving materials and methods, teacher in-service education, or experimentation with new ideas and practices.

The attainment of educational quality does not come easily; it calls for a sustained, deliberative process. Creative personnel, long-term financial commitments, and tenacity of purpose are all involved. Achieving quality is difficult and costly, and sometimes uncertain, but the less wealthy nations of the world, especially, can ill afford not to pursue it strenuously because they are simply not rich enough to afford the luxury of poorly planned exercises in trial and error, or to fritter away scarce resources on programs that are marginally productive.

According to recent projections, public expenditures for education could reach a level of twenty-five percent (25%) of the national budget and 4.4% (3.2% in 1970) of the Gross Domestic Product by 1980.[1] Such financial projections strike an unrealistic note. They telegraph

(1) Educational Planning Division, Problems of Financing the Thai Educational System during the 1960s and 1970s, Ministry of Education, Bangkok, June 1972, pp. 137-138.

the signal, moreover, that more of the same education will not suffice; inefficiencies must be steadily uprooted; current promising programs encouraged and strengthened; and bold, innovative ideas and approaches introduced, adopted, and supported. Emphasis on quality is the road to maximizing baht inputs.

CONCEPT D: Broad Spectrum Curriculum

Curriculum is the central essence of education and it should be examined, modernized, and reconstructed as an integrated totality of interrelated parts, rather than as individual subject areas, because a broad spectrum approach to learning is more realistic, more effective, more rapid, and more economical. (See Chart 6.)

Rationale

(a) More Realistic

Rural living does not follow a textbook; it seeks to solve daily problems and meet daily needs. For example, in dealing with rice farming knowledge and skills are needed concerning the selection of seed, the place and time to plant, weather, fertilizers, plowing techniques, water buffalo care, input costs, output yield, marketability, storage, cooperative approaches and much more. And which "academic

CHART 5

TOTAL ENROLLMENTS & EXPENDITURES FOR CAO SCHOOLS, 1972

ENROLLMENTS:	Grades 1-4	4,041,000
	Grades 5-7	386,000
		4,427,000

(Total elementary enrollments, private and public, = 5,695,000)

EXPENDITURES (Capital outlays not included):

Teacher Salaries, Benefits, etc.	2,066,308,000
Operating Expenses (Repairs, Materials, Supplies, Equipment, etc.)	84,695,000
	฿2,151,003,000

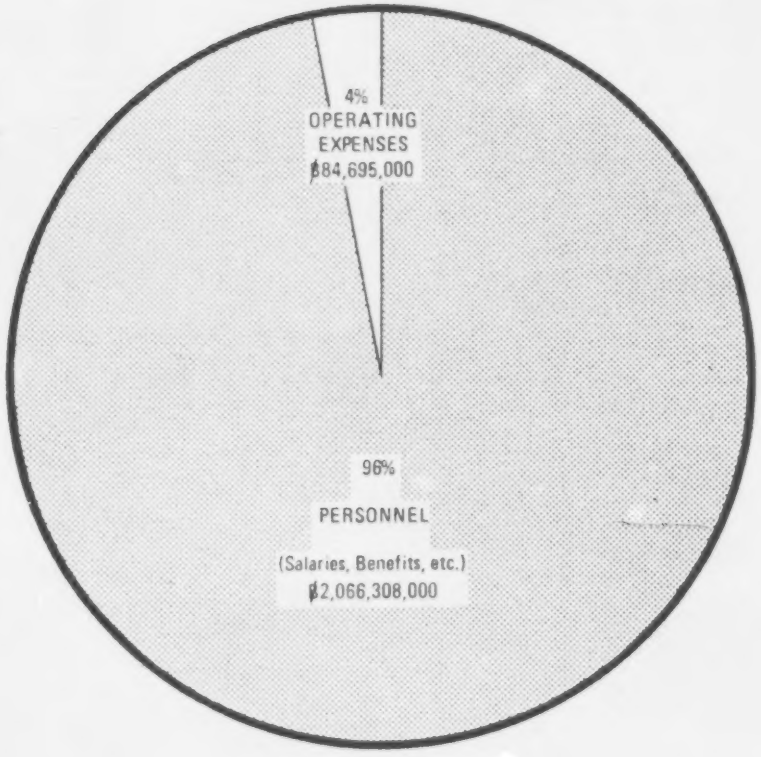
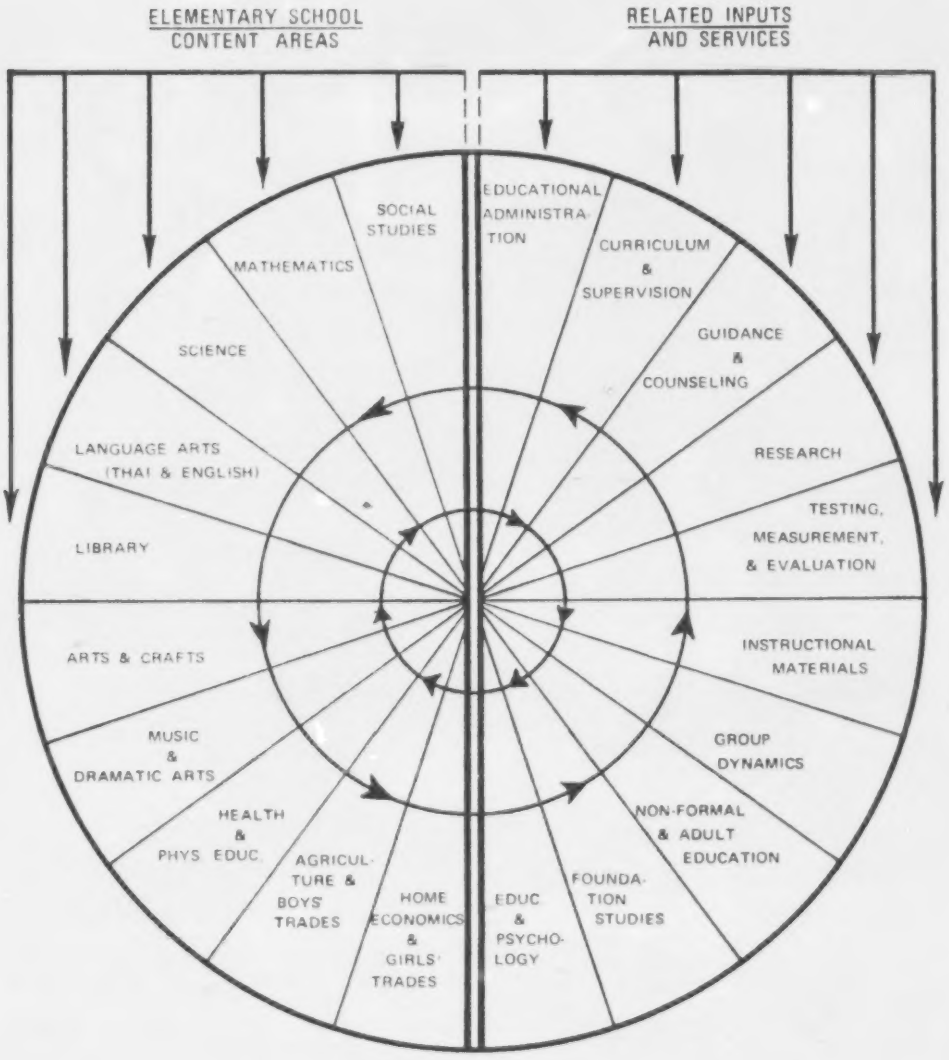


CHART 6

CURRICULUM DEVELOPMENT: A PROCESS OF RECONSTRUCTION UTILIZING A BROAD SPECTRUM APPROACH



1 of 2 blank

subjects" are involved? Certainly, science, mathematics, language arts, economics, salesmanship, animal husbandry, agriculture, astronomy, and even the psychology of human relations. The point should be clear: To develop a "relevant" curriculum -- a much-overworked and little-understood term -- calls for a concentration on common objectives dealing with rural problems, rural work, rural activities, and rural life -- and not on strict and narrow intellectual disciplines. Curriculum change conducted in this way results in a comprehensive reconstruction of what and how children should learn and not on the mere addition or deletion of piecemeal academic items or units.

A statement of reinforcement:

> "Education suffers basically from the gap between its content and the living experience of its pupils, between the system of values that it preaches and the goals set up by society, between its ancient curricula and the modernity of science. Link education to life, associate it with concrete goals, establish a close relationship between society and economy, invent or rediscover an education system that fits surroundings -- surely this is where the solution must be sought."(1)

(b) More Effective

When developing both student and teacher reading materials,

(1) UNESCO, Learning To Be, op. cit., p. 69.

p. 102 blank

say in the field of rice farming, they are apt to be considerably more effective if a team of specialists representing a variety of disciplines works cooperatively and simultaneously to make certain that the materials being written are scientifically up-to-date, instructive in terms of providing new and helpful ideas, relevant in relation to the people and places involved, readable with respect to vocabulary control, and practical insofar as suggesting specific tasks and activities that can be carried over into their everyday village life.

(c) More Rapid and Economical

Abundant experience, especially in the United States, indicates that curriculum reconstruction on either the state or local level, when treated as a total enterprise and pursued as a team effort, gives the end product a higher degree of unifying purpose at a faster pace and at more economical cost. Curriculum specialists, working in isolation, tend automatically to give disproportionate value and priority to the discipline they represent. When working in tandem, one group of specialists "completes" its work only to be followed by another team which by and large ignores the work of the earlier team or gradually replaces its priorities and biases with ones of their own.

Educational specialists, just like specialists in the field of medicine, need each other. To take the best ideas from each of these specialists, to take them in proper proportion, and to combine them

into a total unifying experience, relevant to an individual's values and living realities, and challenging to his personal interests and abilities, is the awesome task implied by the term, "curriculum relevancy".

CONCEPT E: Environmental Influence and Pilot Approach

A new project seeking improved educational programs in the rural sector should begin as a pilot approach, and should be directly located in a typically rural environment, utilizing applied research and development to discover more effective solutions to the problems of the area.

Rationale

(a) Especially during the past decade the environment, that is the community, its people, and problems, has come to be recognized as a classroom without walls and a laboratory for learning. Schools and colleges must be located in the midst of where people facing such problems live since finding solutions to them calls for their interested participation. It also calls for the cooperation and coordination of a variety of other agencies. Joint school-community efforts aimed at local or regional development can result not only in more effective answers to nagging problems, but also to new and deeper personal relationships, to higher levels of personal satisfaction that emanate

from the realization of a job well done, and to the cultivation of a more responsible and confident approach to the solution of problems that may arise in the future.

A single example of an American university that has utilized its resources to serve its region, and that has grown impressively in the process, is Morehead State University (Morehead, Kentucky) which was elevated from college to university status in 1966 largely as a result of applied research and development activities and services designed to educate thousands of adults in the surrounding geographic area. Morehead State University, under continuing federal grants begun in 1965, is serving as the demonstration center for the highly recognized Appalachian Adult Basic Education Project which conducts research and development activities in instructional materials, facilities, and educational technology for undereducated adults in a thirteen-state region. The University provides leadership coordinating services in and among state departments of education, diversified training programs, and consultant assistance. The University, in effect, is acting as a catalytic agent to improve the lives of people surrounding it.

(b) Progress means changing, and changing should mean freedom for small scale experimentation, exploration, and evaluation before making large scale commitments. That, simply stated, is the rationale for beginning a new quality-directed project on a pilot basis. It is the

generally accepted approach for testing innovations as varied as the Wankel engine on the one side and chemotherapeutic agents to control cancer on the other.

Of course, there is -- or ought to be -- a meaningful relationship between quantity and quality. A successful pilot project, for example, eventually ought to disperse its qualitative innovations among an ever increasing quantity of the population. Good things often start small, but if they are really good, they should not stay small; others should enjoy them.

(c) In a recent hard-hitting article by Ford and Rockefeller Foundation researchers, sharply criticizing in Lesser Developed Countries (LDC's) the over-extension of education beyond employment opportunities, the following recommendations were included:

> "To the extent that LDC's can and will finance needed educational expansion of traditional kinds out of their own resources, donor agencies are given an opportunity to be more selective and innovative in their own contributions to educational development. We would give priority to the following kinds of activities:
>
> "(a) Intensified and expanded applied research, particularly in the developing countries themselves, on alternative educational and informational delivery systems appropriate to the diverse employment needs and opportunities of these nations. Special attention should be given to those opportunities outside of the modern sector, the sector towards which western type industrial training and higher educational systems are presently oriented.

"(b) Systematic and controlled pilot experimentation with educational innovations emanating from research efforts. Given the risks and costs associated with experimentation it is unlikely that developing nations will be able or willing to bear the cost of systemic experimentation." (1)

(d) One of the most common criticisms of pilot projects is that they often do not get far beyond the pilot stage. Of course, in the project presented here, even if that were to hold true, the lives of millions of people would have been positively affected provided the project is successful. But, having stated that, it is important to add a follow-up statement clearly indicating that the project, as stated earlier, is designed to serve as a prototype for similar projects and activities in other rural, and possibly urban, areas of the country. The dispersion of findings and experiences from the pilot area to other provinces and interested institutions should begin during the early months; as activities expand, communications on a systematic basis should be expanded also. Field trips to the pilot project, at a proper point in its maturation, should be encouraged. And there is perhaps no better way to stimulate national dispersion of information and events than to make certain that the professional staff of leaders, writers, and researchers are representative of every section of the nation.

(1) Edgar O. Edwards and Michael P. Todaro, "Educational Demand and Supply in the Context of Growing Unemployment in Less Developed Nations", Paper delivered at Ford and Rockefeller-sponsored conference, Bellagio, Italy, May 1972, p. 5.

CONCEPT F: Existing Institution and Leadership Utilization

A new, innovative pilot project, in order to progress more rapidly and efficiently, should rely heavily, but not exclusively, on existing educational and community institutions and leadership personnel.

Rationale

(a) There are already in existence numerous educational, social, and religious agencies such as Buddhist temples, schools, and colleges of all descriptions, technical and trade institutes, provincial and local administrative offices, adult education centers, and public health clinics which are daily rendering invaluable services to their people. They are doing this often under adverse conditions and with limited funds. They are often well aware of their limitations, and almost as often knowledgeable of what is needed to improve their services. They are, in many cases, anxious to modernize their procedures and try new ways, but they are often severely limited by funds and a lack of trained personnel. They possess an abundance of realistic, down-to-earth knowledge and practical experience in dealing with village people; they possess an equal abundance of commitment and good will. Efforts in rural reconstruction can hardly succeed without them.

(b) Experience over the centuries indicates that the most effective change agents in almost all of our institutional hierarchies are the highly talented men and women who, slowly through the years, have risen to the top of their organizations and now assume considerable responsibility and power. Policies and decisions which stand the best chance of being implemented in almost all cases have their source at the desks of these leaders. They command respect because of past achievements, recognized ability, seniority, and experience. They are where they are because of what they have done in the past. The vigorous participation of these leaders is absolutely essential to the success of any future innovative project. It is only through the convictions and efforts of highly respected national and local leaders that the faith and confidence of villagers can be rallied.

(c) The importance of the leadership-management role in educational modernization is succinctly stated by Philip Coombs:

> "Unless educational systems are well equipped with appropriately trained modern managers -- who in turn are well equipped with good information flows, modern tools of analysis, research and evaluation, and are supported by well-trained teams of specialists -- the transition of education from its semihandicraft state to a modern condition is not likely to happen." (1)

(1) Philip H. Coombs, The World Educational Crisis: A Systems Analysis, Oxford University Press, New York, 1968, p. 168.

CONCEPT G: Teacher Training Emphasis

Teacher training institutions, at all levels, should serve as workshop and discovery centers reflecting the most productive and progressive ideas and practices in the field of education today; they should serve as exemplars for the rest of the nation for what is best in teaching; and they should serve as dynamic training institutions at both the preservice and inservice levels, inculcating in all teachers regardless of diploma or degree status, that to be professionally respectable their education must never end, and their teaching role must be perceived as including both children and adults.

Rationale

(a) The Under-Secretary of State for Education, in a recent paper, leaves no doubt concerning the priority status teacher education should receive.

> "There are many approaches to educational improvement .... nonetheless, our major thrust is in the field of teacher education. Why? The answer is six-fold: (1) Because teacher education embraces comprehensively all academic disciplines (science, mathematics, history, music, etc.) and all institutional levels (elementary,

secondary, etc.); (2) Because it very directly involves all the critical educational components (curriculum, instructional materials, staffing, facilities, research, etc.) required for teaching and learning; (3) Because it represents the optimum vehicle for multiplier effect in the dispersion of education on a national or regional scale (See Chart 7.); (4) Because it affords, among a myriad of public and private established institutions, the most promising route for shortening the time between the introduction of an educational innovation and its implementation; (5) Because it serves as the most economical approach for maximizing dollar inputs in terms of learning outputs; and (6) Because it possesses a powerful potential for acting as a bridge between school and community, a classroom without walls, a place where teachers teach humanity, where age difference is unimportant and where children and adults alike take on the common name of learners."(1) (See Chart 8 for a schematic presentation directly related to items (3), (4), (5), and (6) above.)

(b) In the nation today there is growing discussion and concern in areas dealing with the need for stronger national unity, increased self-discipline, more concern over unchecked population growth, more profitable farming, and high-protein diets. To bring about actual behavioral change in any or all of these areas will require effective education, and effective education begins with curriculum and instructional materials changes at the teacher training level. It is not an over-statement to say that the architects of national destiny are those

(1) Bhunthin Attagara, "A Critical Review of the Report of the International Commission for Educational Development/ UNESCO", Bangkok, September 1972, pp. 8-9.

CHART 7

NATIONAL RADIATION EFFECTS OF INPUTS AT THE TEACHER TRAINING LEVEL

THAILAND, 1972

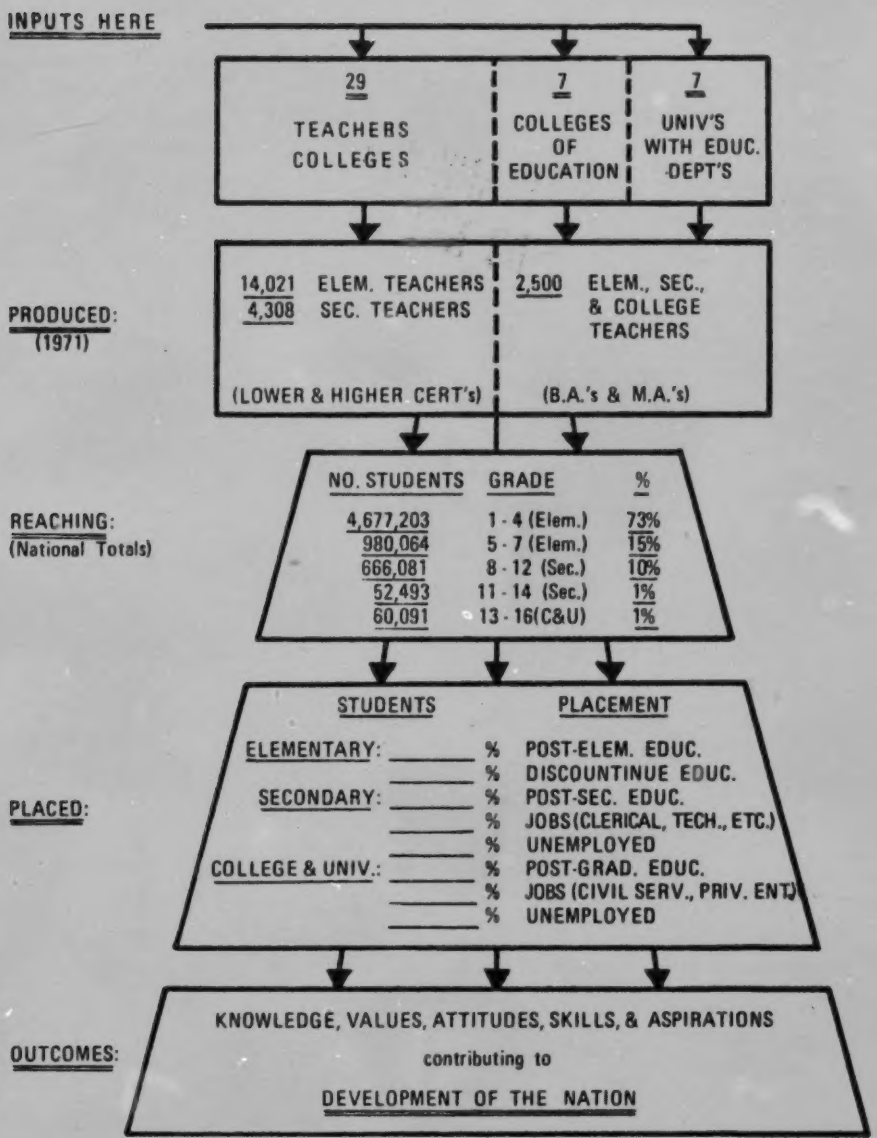
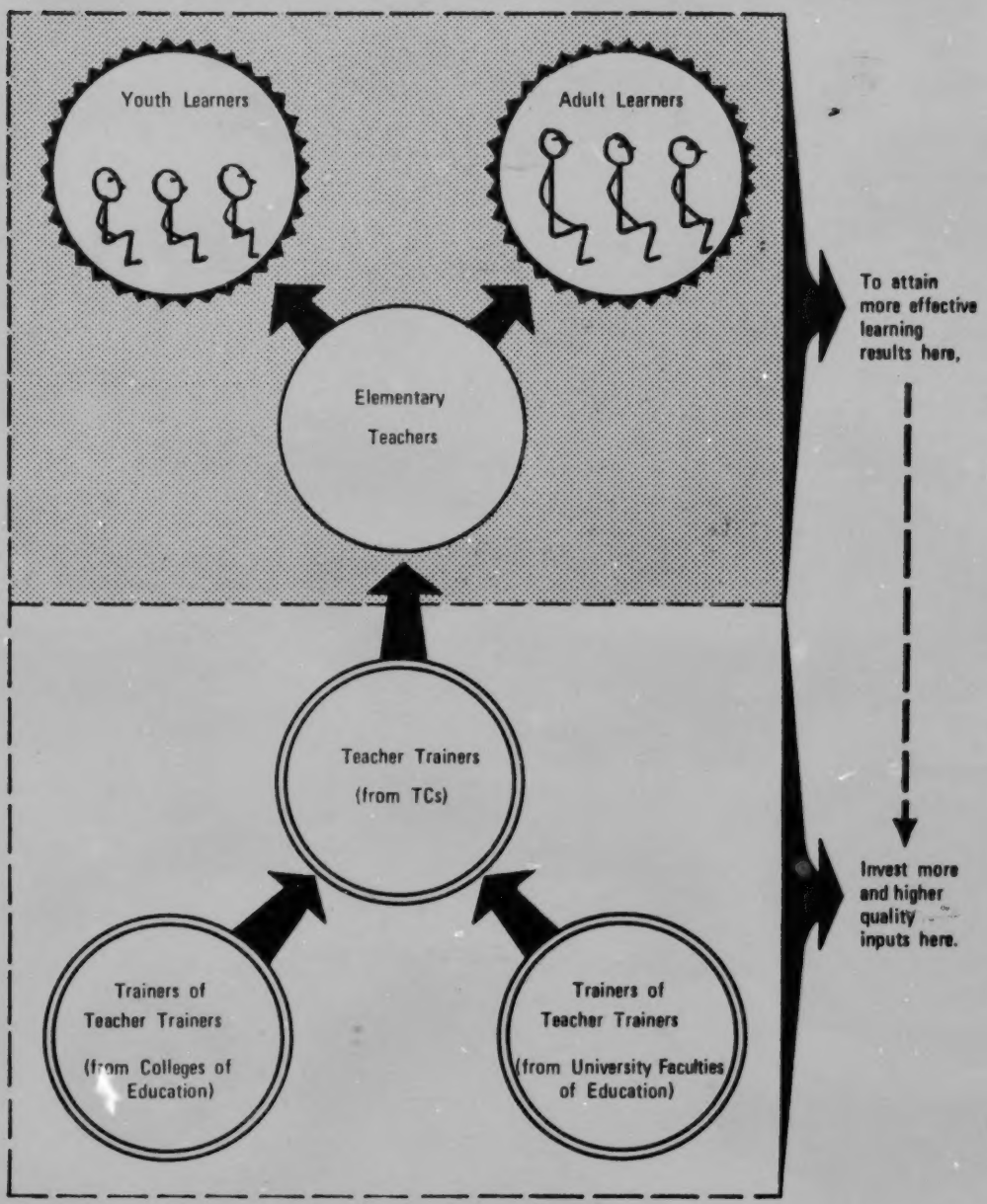

INPUTS HERE
29 TEACHERS COLLEGES
7 COLLEGES OF EDUCATION
7 UNIV'S WITH EDUC. DEPT'S
PRODUCED: (1971)
14,021 ELEM. TEACHERS
4,308 SEC. TEACHERS
(LOWER & HIGHER CERT's)
2,500 ELEM., SEC., & COLLEGE TEACHERS
(B.A.'s & M.A.'s)
REACHING: (National Totals)
NO. STUDENTS GRADE %
4,677,203 1 - 4 (Elem.) 73%
980,064 5 - 7 (Elem.) 15%
666,081 8 - 12 (Sec.) 10%
52,493 11 - 14 (Sec.) 1%
60,091 13 - 16(C&U) 1%
PLACED:
STUDENTS PLACEMENT
ELEMENTARY: _____ % POST-ELEM. EDUC.
_____ % DISCOUNTINUE EDUC.
SECONDARY: _____ % POST-SEC. EDUC.
_____ % JOBS(CLERICAL, TECH., ETC.)
_____ % UNEMPLOYED
COLLEGE & UNIV.: _____ % POST-GRAD. EDUC.
_____ % JOBS (CIVIL SERV., PRIV. ENT.)
_____ % UNEMPLOYED
OUTCOMES:
KNOWLEDGE, VALUES, ATTITUDES, SKILLS, & ASPIRATIONS
contributing to
DEVELOPMENT OF THE NATION

CHART 8

TEACHER-LEARNER DIRECTIONAL MODEL WITH IMPLICATIONS FOR RESOURCE INVESTMENTS


Youth Learners
Adult Learners
Elementary Teachers
Teacher Trainers (from TCs)
Trainers of Teacher Trainers (from Colleges of Education)
Trainers of Teacher Trainers (from University Faculties of Education)
To attain more effective learning results here,
Invest more and higher quality inputs here.

p. 114 blank

leaders and teachers who plan and implement the values and attitudes which both our youth and adults should emulate and cherish, and the programs of study which they should experience and hopefully master.

(c) Twenty-nine (29) teacher training colleges, seven (7) colleges of education, and seven (7) universities with faculties of education are currently engaged in producing the nation's teachers. More than half of these institutions are located in rural areas. The construction of six (6) additional teachers colleges are called for during the course of the 1972-76 Five-Year Plan. These, too, will be located in rural areas. Because of their strategic location, the facilities and resources they have available, their close contacts with the neighboring people, and their understanding of the region, these institutions are in highly favorable positions to render a variety of useful services such as sponsoring workshops and seminars, providing leadership and consultant services, re-cycling veteran teachers with inservice programs, producing needed learning materials, conducting practical research studies, and assisting with community planning and project execution.

(d) A clarion call for sweeping changes in teacher education was made a few years ago by Philip Coombs:

> "Today's teacher does not have a chance to be modern -- to raise his productivity, to keep up with new knowledge and with new teaching

techniques. He never did have. More likely than not, he is trained for yesterday's schooling, not for tomorrow's, or if by chance he is trained for tomorrow's, he is soon restrained from utilizing his training by the realities of his first teaching assignment. His professional growth from there on is problematical at best, especially if he heads off into the lonely isolation of a village school ....

"Clearly, educational systems will not be modernized until the whole system of teacher training is drastically overhauled, stimulated by pedagogical research, made intellectually richer and more challenging, and extended far beyond preservice training into a system for continuous professional renewal and career development for all teachers."(1)

(e) One further quote from the 1971 African research study of John Hanson:

"If primary schools are the principal institutions in the formal school system for making men modern, it does not follow that much leverage can be applied to these schools directly. It is the organization and quality of learning within them which is probably the key to their modernizing influence, and in the nations of Africa the quality of learning is undoubtedly even more a product of the capacity of the teaching force than it is in wealthier countries where enrichment is possible through modern teaching aids, workshops and libraries, and buildings which encourage teaching methods flexibility."(2)

(1) Philip H. Coombs, op. cit., p. 168.

(2) John W. Hanson, op. cit., p. 17.

CONCEPT H: Skill Concentration

While theoretical constructs and conceptual ideas are both fundamental and indispensable, it is the area dealing with the mastery of relevant and specific teaching-learning skills that should be emphatically stressed in any program of educational reform.

Rationale

(a) Despite fantastic and once-considered incredible breakthroughs in many fields of science and technology, especially since World War II, the process of teaching and learning, in most classrooms of the world, remains frozen in its habits of the past. Sociologists call this cultural lag, a case of man's machines advancing more rapidly than his mind's ability to exercise control over them. Charles Silberman in his three-and-a-half year Carnegie-commissioned study of American education, still sadly found many schools "grim, joyless, intellectually sterile, and aesthetically barren".(1) Harsh words? Maybe exaggerated words. But the point is that despite all that teachers have been taught about relevant curriculum content and modern methods of instruction, much of the content which they still teach is outdated or irrelevant, and

(1) Charles E. Silberman, Crisis in the Classroom, Random House, New York, 1970, p. 10.

their method, for the most part, is still too often a matter of near-continuous talking and lecturing. The role of students is too often one of listening, note-taking, memorizing, and forgetting. And the problem of living with uninspiring teaching, it is obvious, is not just an American problem, or a Thai one; it is universal. Skills, specific skills, relevant skills, useful skills, learnable skills are the real key to improving educational quality.

(b) Why is it that so many teacher education programs tend to be degree or diploma oriented rather than skill oriented? Naturally, it would be nice if they could be both. Why do so many teacher training programs, both degree and non-degree, both graduate and undergraduate, tend to place more emphasis on subject matter coverage and abstract, philosophical discussions, and less emphasis on the skills and experiences needed by teachers for the more specialized aspects of their jobs -- aspects such as writing performance objectives, designing and properly utilizing different kinds of instructional media, mastering a variety of teaching methods, employing "discovery", reinforcement, and non-directive techniques in the classroom, developing exercises that promote self-direction and independent learning in their students, acquiring skills related to group work and leadership training, understanding the motivations required to teach adults, and creating and applying an assortment of evaluative instruments and

approaches? The teacher is both an artist and a technician. To improve his performance, teacher training institutions will have to begin soon to give more emphasis to the latter - without, incidentally, neglecting or slighting the former.

(c) A quote on the critical need for new skills from Learning To Be:

> "All possible resources of educational technology must be systematically introduced into teacher-training institutions. These must be gradually transformed into centers for permanent training and opened to persons engaged in other activities outside the education sector who are called upon to fulfil part-time or short-term teaching tasks. In the professional training of educators, particular attention must be paid to their preparation for supervisory and co-ordinating roles within the framework of teaching new technologies. It is equally necessary to train specialists at all levels in designing and revising curricula and learning objectives, systems organization, guidance and evaluation, production of materials (printed, programmed, audio-visual), group dynamics, maintenance, etc." (1)

CONCEPT I: Cooperative Team Effort

To produce the significant and widespread changes called for in the project objectives, and to do so on a lasting basis, the project should assemble some of the nation's foremost educational planners,

(1) UNESCO, Learning To Be, op. cit., pp. 213-214.

writers, and teachers, many of them on a full-time basis, to work closely with both short- and long-term outside specialists in the designated pilot area and institutions.

Rationale

(a) Textbook writing, curriculum revision, leadership training, etc. call for professionals who can work on a full-time basis. Their jobs will call for numerous conferences, discussions, field visits, and, many times, for quiet, solitary study, writing, and research. Certain project roles, particularly those dealing with policy determination, will involve top-level Ministry, College, and University officials on a part-time basis.

(b) For the project to succeed, the inputs -- especially in professional personnel -- must be commensurate in quality and numbers with the objectives to be achieved. Insitution-building, what the project is all about, first and foremost, requires highly capable staff in adequate numbers. Whether we are talking about the experimental television program for rural elementary education in Niger, the activities of SEATO or NATO, or an educational program for rural Thailand, fragmentary, piecemeal inputs simply will not work. To tip social change, there is no substitute for high quality inputs in adequate amounts.

(c) To accelerate the pace of positive educational change and to economize on costs, wise use should be made of outside specialists who would work in an advisory capacity under the guidance and direction of Thai staff. While it is true that oft-times specialists (sometimes labeled advisors, consultants, or experts) have had little to offer beyond high-cost sympathy and reassurance, it is also true that competent and field-tested specialists can save a project and nation many years of time and huge sums of money. The magic lies in the specialists' selection.

The Royal Thai Government at this very time is seriously contemplating a new international airport for Thailand to serve the country's rapidly growing transportation needs for the decades ahead. (It is also, incidentally, beginning study on a possible canal to intersect its extended southern peninsula.) In its airport planning, it is sparing no effort or reasonable cost to make certain that the new facility, which may cost in the vicinity of US$150,000,000 will reflect the world's best know-how which it hopes to acquire through the advice and recommendations of specialized consultants, the experiences of large and expanding airports in other nations, the latest research on all-weather traffic, safety measures, air and noise pollution, etc., the most recent technological developments, etc. Airports (and canals) are important, but so are schools and colleges. Facilities which produce the nation's educated

manpower and human resources deserve at least as much attention, careful study, and research as the airfields which handle much of the nation's traffic.

An attempt to "save" a relatively limited number of Baht by ignoring or under-utilizing the developments and inventions of other nations in the name of saving time, saving money, total self-reliance, or strong satisfaction with the status quo can hardly be defended. Narrowing the gap between more and less developed countries calls for what is commonly termed "leapfrogging", a process of bypassing years, and sometimes decades or centuries, of painful and plodding discovery in other nations by selecting and adapting the best of their discoveries and then incorporating them with improvements and refinements into one's own society.

(d) There is probably no nation in the world that makes wider use of consultants and specialists than the United States. The knowledge explosion coupled with growing keenness in competition has forced business, public, and private organizations, of all types, to resort almost daily to the services of individuals with specialized knowledge and experience. As part of its recently-stated reform program in foreign assistance, the United States Agency for International Development highlighted the far-reaching impact that individuals and institutions with special talents might make.

> "The task ahead is to find fresh ways of relating the innovative, creative and knowledgeable individuals and institutions in our society -- all kinds of institutions -- to developing country individuals and institutions in such a way that the quality of the lives and the productive capacities of people in these countries can be improved. The assistance techniques must adjust to the changing realities in the developing countries. The preferred mode is joint problem solving by LDC and American personnel."(1)

(e) The use of outside specialists working in close cooperation with Thai leaders, directly in a Thai environment, and enveloped with Thai values and realities, gives high promise for productive outputs that are truly Thai, that are woven into the very fabric of Thai society. Joint undertakings will provide realistic and practical internship experiences that should prove more valuable to both individuals and the nation than independent participant training programs abroad. Under a joint venture arrangement located on Thai soil, there will be excellent opportunities for considerable participant training right within Thai land with research dealing directly with Thai people, places, and problems. Follow-up study abroad as necessary and appropriate should be arranged for those participant-researcher-field workers who demonstrate promising ability and professional commitment.

---

(1) Agency for International Development, "Complete Text of Agency's Reform Plan Notes Need for Major Changes", Front Lines, Washington, D. C., January 27, 1972, p. 6.

(f) Concerning the need and new role of foreign "experts", the Report of the UNESCO-sponsored International Commission on the Development of Education states the following:

> "With aid channelled largely towards innovation, countries will have to call for new services: dispatch of multidisciplinary teams of highly qualified experts who can help work out new alternatives, ... organization of new types of teaching and study centers, modern techniques for measuring behavioural patterns, curriculum design, preparation of teaching aid, etc.
>
> "Hand in hand with this reorientation of international aid there should be a radical transformation of the relations between 'givers' and 'receivers', between the foreign 'expert' and his local counterpart. These relations must be replaced by partnership a working together in search of new ways -- sharing not just costs, but the risks of the undertaking, for innovation is not possible without risk in an area as complex and hazardous as education."(1)

CONCEPT J: Educational Technology and Mass Media

In the modernization of education heavy accent should be given to the wider use of appropriate instructional materials and mass media, at both formal and non-formal levels, to promote more effective cognitive, affective, and psychomotor learning.

(1) UNESCO, Learning To Be, op. cit., p. 259.

Rationale

(a) All human beings learn through sensory experience -- hearing, seeing, feeling, tasting, and smelling. Instructional materials, especially those that are multi-media in design and that stress the sense of sight, make sensory experience more vivid and real, and in so doing make learning more lasting. And for learning to be lasting, it must affect an individual's behavior totally: his cognitive side dealing with knowledge and thought processes; his affective side dealing with feelings; and his psychomotor side dealing with coordination between mind and body.

(b) The textbook, sometimes referred to as the original teaching machine, and the teacher's guide are still the backbone of a solid curriculum.(1) Educational media, modern and traditional, should serve as supplements to the content and activities which they prescribe. Textbooks and teacher's guides should be modern yet relevant in content, flexible in format, and low in cost.

(1) The word textbook should not be construed to mean a single hardback volume of printed pages often associated with formal schooling. Rather, in most cases, the textbook will mean short, softback, low-cost, and locally-published pamphlets or units. Shorter text units are more adaptable to individualization of instruction, to the addition, deletion, or revision of selected curricular areas, to the articulation of instruction under the current graded system, to the development of enrichment units for students with special interests or abilities, and to the printing and replacement of units at lower costs.

(c) The use of mobile units to transport science and art exhibits directly to the schools, libraries on wheels, slides, tapes, overhead transparencies, 8 mm. and 16 mm. films, and video tape, all, in varying degrees and at different times, have a major role to play in improving teaching and learning. The potential of mass media, in the form of radio, television, and the press have hardly been tapped in terms of advancing the educational cause. They can serve, if carefully programmed, as adjuncts to the formal school program, and as instruments of continuing education for out-of-school youth and adults, forming links between the school and the community.

(d) Economic-educator Philip Coombs calls for:

> "Increased expenditures on textbooks and other learning aids to enable students to learn more on their own, to raise teacher productivity, and to 'protect' students against poorly qualified teachers. Unfortunately, the reverse trend exists in many developing countries, where pressure of rising teacher costs has the counteracting effect of depressing allotments for instructional materials and school libraries." (1)

(e) Professor Frederick Harbison of Princeton University pointed up the priority to be given to instructional aids in these words:

> "The newly developing countries must pioneer in the new methods of teaching -- perhaps in utilizing modern inventions such as television, teaching machines, and other technological

(1) Philip Coombs, op. cit., p. 136.

devices which are not yet widely employed even in the most advanced countries. In fact, the need for new technologies of pedagogy is greater in newly developed countries than in those with more fully developed education systems."(1)

Educational technology certainly has much potential for educational advancement in our nation. However, balance is called for -- balance of hardware with relevant software, locally-made, low-cost materials with modern media, new equipment with skilled technicians, new curricula with related preservice and inservice education, and short-term installation costs with long-term operational costs.

CONCEPT K: School Design and Modernization

Since educational buildings represent the educators' most expensive instructional tool, and since they have a direct bearing on the quality of teaching and learning, the planning of new facilities or the modernization of old ones should pay the highest attention to how learning space is conceptualized, designed, constructed, and utilized.

Rationale

(a) Just as a surgeon requires a well-designed operating room

(1) Frederick Harbison, Excerpt from a paper presented in East Africa, September 1969.

equipped with appropriate surgical instruments to perform his work, so, too, do teachers instructing in different disciplines require flexible classrooms, science laboratories, seminar facilities, libraries, instructional materials centers, gymnasiums, auditoriums, cafeterias, offices, etc. to do their job as it should be done. Too often teachers are handicapped in performing their tasks because of limitations in the amount and arrangement of space within which they must work. Nowhere are these limitations more glaring than in the rural elementary schools where space is cramped and physical surroundings devoid of comfort and intellectual stimulation.

(b) The nation, during the current decade, will most likely spend millions of baht for the construction of new facilities and the renovation of old ones on every educational level from the humble four-room elementary schools of remote villages to adult education centers to modern comprehensive secondary schools and universities in city areas. Concentrated research and competent consultative services can go a long way in guaranteeing that such new or renovated facilities are functional in use, aesthetic in appearance, and economical in cost.

(c) The design and construction of functional and flexible educational space can encourage and promote a wide range of educational innovations in areas such as small and large group instruction, uses

of modern media and technology, flexible scheduling, novel approaches to school organization and administration, independent study, team teaching, curriculum reconstruction, and a myriad of teaching methodologies. The Architectural Division of the Department of Teacher Training, along with the temporary services of short-term consultants, can provide national leadership in the vast and exciting field of school architecture by working with educational planners and administrators in drafting more modern, forward-looking educational specifications, in planning for creative site utilization, in translating sound educational concepts into bricks and mortar, in drawing up imaginative schematics and working drawings, and in adapting and applying the latest architectural and engineering findings in areas such as thermal environment, light utilization and control, circulation patterns, and zonal interrelationships.

CONCEPT L: Decentralization Trend

A pilot project in the rural sector should provide an excellent opportunity to experiment with a gradual remodeling of the educational structure of organization and administration whereby strong, dynamic centralized control is enhanced and complemented by a growth in

both responsibility and authority at the regional or institutional level.

Rationale

(a) Strong, centralized authority and control, responsible for education throughout the nation, are the most essential prerequisites for a smoothly operating educational system. Since both the Ministry of Education and the Ministry of Interior share many leadership responsibilities for national education, inter-Ministry cooperation and coordination are most essential.

(b) As the population grows rapidly, as educational activity becomes more intense and complex, as demands multiply for adapting the curriculum to regional needs and characteristics, as increasing problems logjam on central ministry desks, and as bureaucracy spreads and grows, it is most urgent that organizational and administrative policies be restructured so as to encourage wider and more spontaneous regional and local initiative. Initiative, responsibility, and commitment in the field are much more likely to flourish when leaders and constituents at the regional and local level are entrusted with wider powers in decision-making and policy formation that impinge directly on their daily affairs and activities.

(c) Administrative decentralization, if the issues and programs involved are significant and not peripheral, is a valuable exercise in

self-government and democracy. The form, scope, and pace that it takes must obviously be attuned to the ability and eagerness of people in the provinces to shoulder wider responsibilities governing their own affairs. Decentralization, of course, should be a gradual process; it certainly does not lend itself to schemes of speeding up. Where it is successful, projects in the provinces will be more efficient because they are daily under the watchful eyes of people who created and nurtured them, and who are proud of what they themselves have developed. At the same time, national leaders at the central level are afforded more time to think creatively and to plan boldly for the challenging times ahead.

(d) An impressive example of a decentralization approach, whose implications could be far-reaching, was recently the topic of a Bangkok newspaper editorial. The decentralization strategy applies to another sector, but it perhaps has a message also for education.

> "General Prapass Charusathiara has done the right thing by giving wide powers to governors over promotions, transfer and dismissals of police officers in their provinces. Because of lack of such powers in the past, governors had little control in their areas of jurisdiction over the maintenance of peace and order and the prevention and suppression of crime ....
>
> "General Prapass' decentralization of authority to provincial governors is a healthy development which will promote responsibility and initiative in local administrators . . . The governors now

know that as far as the administration of their provinces goes they cannot 'pass the buck' any more. They are now accountable for what happens or does not happen in their provinces.

"In this process the bad governors will be shown up clearly before the government and will have to be weeded out while those who use their increased power to administer their areas well can be noticed and given credit . . . . From the decentralization of power to province, district, and village levels, the people of Thailand can truly learn about governing themselves and about democracy."(1)

CONCEPT M: Innovation and Research

The Rural Educational Development Center (REDC) should be imbued with the spirit and practice of research, inquiry, and experimentation as it seeks innovative answers and approaches to a wide and complicated array of educational problems common to rural Thailand.

Rationale

(a) Innovation, from the start, implies a dissatisfaction with the status quo, a restlessness with today's practices and results. It also implies a disappointment or frustration with the commitment of a disproportionate amount of effort and funds to give more children more

(1) Editorial, "Decentralization Works", The Bangkok Post, January 10, 1973.

years of often irrelevant and inefficient schooling at the expense of upgrading the content and method of instruction, the quality and quantity of educational materials, the preservice and inservice training of teachers, and the leadership performance of administrators. Expanding quantity with only a corresponding marginal return of quality is a little bit like adding zeros after the decimal point -- the numbers may look impressive, but they don't amount to very much. Only quality can make quantity count, and for quality to count, innovation is absolutely essential.

(b) Innovation does not come easily or cheaply. It does not operate by the time-clock or the cookbook. Simple directional prescriptions will not work. Rather, innovation is a way of life calling for permanent and adaptable institutions dedicated to continuous inquiry and non-ending reform. As such, new questions, new problems, and new concepts will emerge each day within an exploring and questioning context that honors intellectual curiosity and doubt. But where truly innovative institutions have been established, new ideas, new programs, new materials, and new answers will also come. And each new answer will help trigger a dozen new questions in an endless chain reaction of keeping a society viable and modern.

(c) The recent publication of the classic, Learning To Be, gives stress to the continuity dimension of innovation:

"We consider that the introduction of educational innovations should follow closer co-ordination between research and experiment. We recommend setting up national education development centers or other similar organizations to produce a continual series of educational innovations, leading to a 'perpetual' reform of education." (1)

(d) Philip Coombs, in his always thoughtful and analytic writing, plays up the importance of attitudinal receptivity:

"Before the creation and adoption of innovations can be greatly speeded up, there must be, first, a widespread transformation of the attitude toward change in education -- by the public and educators alike; second, the creation within education of new institutional means and personnel whose prime concern is to seek improvements and innovations; and third, the fostering within teacher training colleges of attitudes that help make future teachers more receptive to innovations, thereby enabling education to engage in a vigorous and continuing process of self-renewal and advancement." (2)

CONCEPT N: Evaluation and Long-range View

Institution-building is a long-term undertaking that should be guided by continuous evaluation to serve as a conscience for judging the merit of all activities, to make certain that project efforts are on target in terms of goals and

(1) UNESCO, Learning To Be, op. cit., p. 226.

(2) Philip H. Coombs, op. cit., p. 119.

objectives, and to provide the required leverage for making changes and modifications in the light of new findings, thinking, and experience.

Rationale

(a) A project proposal should be viewed as a point of departure and not as a blueprint to be followed blindly. The assembly of a team of imaginative professionals, representative of varied backgrounds and cultures, and dedicated to the achievement of common objectives, will most certainly spin off a multiplicity of exciting ideas and activities in the course of their daily work which writers of a proposal could never have even anticipated during the time of project design. Therefore, a proposal must not be a straight-jacket. Rather, it must serve as a initial plan of action, carefully and thoughtfully formulated, which will require continuous evaluation, updating, and refinement.

(b) Changing education for the better is a herculean task. Yet, it is happening all the time, but almost always, slowly and gradually. Education calls for behavioral change, and people do not give up old ways easily, or take on new ideas or habits without procrastination and sometimes pain. Therefore, for a project to succeed, especially one directed to personal and institutional change, it must be viewed as a long-term investment. Pay-off can begin from the earliest days of the project, but the real gains lie in the future, growing like bank

interest at a compoundable rate.

(c) While continuous evaluation of the project is strongly advocated, it is wise to keep in mind the difficulties involved in making it respectable and precise.

> "Repeated proclamations about the need to evaluate projects and programs are usually sounded in the midst of a budget battle, or just after one has been lost. But these have been rarely followed up with the funds and talent necessary for such evaluations. Even if they were, however, any such evaluations would be at best extremely difficult, and their conclusions would be tenuous. A specific project has to be conspicuously successful, or close to disaster, before a sober man will stand firm by unqualified findings, for he knows that his assessment may prove to be incomplete and premature. Side effects, not intended or anticipated, but emerging years later, may prove far more important than success or collapse of the original objective." (1)

CONCEPT O: The Centrality of People

All the effort, research, and resources called for in any new educational venture should be concerned in the first and final analysis with people and their self-realization, with ways and means of making a society more open and humane, and to that degree enriching the nation.

(1) Philip H. Coombs, op. cit., p. 153.

Rationale

(a) Buddhism, the nation's official religion, provides an ideal philosophic and operational base for championing the cause of individual integrity and for directing the purposes and activities of education to the problems and needs of people -- all people. Buddhism advocates contemplation and detachment and, at the same time, positive action and merit through good works. It calls for more respect for human dignity, for more kindness and charity in the market place. Dr. Saroj puts it this way:

> "With a philosophy committed to minimization of greed, hatred, anger, and delusion, and to the belief in right deeds, words, and thoughts, the feeling of respect extended to fellow-men with regard to expression of ideas and action must naturally be rather strong on all sides. On top of this there is also the emphasis on the free spirit of inquiry (Kalama Sutta), which clearly gives recognition to each individual to investigate for himself before advocating any words, deeds, or thoughts. Any person has the right to question, to propose, to experiment and to come to his own conclusion. Full respect is extended to him." (1)

(b) Our modern world is crowded with examples of all kinds of extraordinary achievements, in every field, on every side, depicting power and progress through knowledge and education. New projects,

(1) Saroj Buasri, A Philosophy of Education for Thailand: The Confluence of Buddhism and Democracy, Ministry of Education, 1970, pp. 50-51.

inventions, and research each day demonstrate the indispensability of education in national development. Yet, education provides no guarantees; it has had its share of reverses and its moments of darkness. It remains, despite the knowledge explosion and the monumental advances of science, an exercise of faith -- faith in the fact that man can be more than he is, that there is some measure of greatness within him, that he is modifiable, and that enough education of the right kind is the instrumentality for his self-discovery. The pilot project described in this document aims to extend this possibility of self-discovery over a period of time to millions of rural village people who deserve a more hopeful future.

Section VI

PROJECT FEATURES AND IMPLEMENTATION

This section presents specific project features and implementation approaches designed to contribute to the achievement of national and project objectives and to the alleviation of pressing educational problems presented earlier. It also is intended to be compatible and consistent with project assumptions, concepts, and rationale described in the previous two sections. It will deal with features such as project geographic location, participating institutions and personnel, the creation of three new educational components or sub-centers, consultants and participants, and organizational-administrative structure.

A. Geographic and Institutional Selection

This pilot project is strongly committed to the rural sector -- but which particular part of this sector? Listed below are criteria which have been utilized to answer this query.

1. Guiding Criteria

(a) The setting should be typically rural in nature and in dire need of socio-economic improvement.

(b) The location should possess a high degree of accessibility both as it relates to local road transportation and to air travel from other regions of the country, especially Bangkok, the center of the

pp 141-142 Mauk

controlling governmental agencies and ministries.

(c) The geographic area should contain a complex of varied institutions directly involved in elementary education, teacher education, and community and adult education. These institutions, which should be within reasonable proximity of each other (approximately a one hour's drive), should include, if possible, a university with a faculty of education, a college of education, a teacher training college, a provincial education office, about a dozen elementary schools, an adult education center, community agencies engaged in some nonformal aspects of education, and hopefully several secondary, trade and technical schools.

(d) The educational institutions cited above, especially those concerned with teacher education, should possess a nucleus of capable and dynamic leaders and specialists who are dissatisfied with current educational performance, who invite promising change, and who are anxious to cooperate with other institutions and outside specialists in addressing the educational problems of the region.

(e) The educational institutions cited above should be made up of competent teaching staffs who are highly interested in participating in an innovative project that aims to produce better educational curricula, materials, leadership, and teacher training programs.

(f) The pilot area, particularly the educational institutions, should desirably have a reasonably stocked professional library, printing and publishing facilities, and a reservoir of resource people in such fields as agriculture, public health, family planning, public safety, mass media, community development, and various forms of nonformal learning.

(g) The pilot area should, if possible, have available mass media resources, especially television and radio transmission stations and a local press.

(h) The pilot area should possess a reasonable degree of security to allow the people employed there to go about their work without excessive precautions and undue worry.

(i) The pilot area should include for new staff reasonably satisfying living amenities such as housing, electricity and water, shopping facilities, elementary and secondary schools for children of staff members, recreational outlets, etc.

(j) The educational institutions participating in the project should currently contain, or be willing to procure -- at least partially -- office space, housing, and other facilities which it would be willing to share with the project participants.

(k) The educational institutions involved in the project should possess potential for considerable growth and expansion since the basic

aim of the project is to create and nurture permanent institutions capable of ministering to the constantly growing and changing needs of their region.

2. Meeting the Criteria

Of the criteria listed above, naturally some are more critical than others. Naturally, too, no single geographic area or complex of institutions will fully satisfy all criteria. However, the area that currently most fully meets the criteria listed is the Northeast section of Thailand; the institutions are Khon Kaen University, Maha Sarakham College of Education, and Maha Sarakham Teachers College.

Therefore, project activities will concentrate, at least in their early stages (Time Phase I), in the geographic area immediately surrounding Khon Kaen in Education Region No. 9 and Maha Sarakham in Region No. 10. In creating new curriculum content and materials, in conducting workshops and seminars, and in pursuing other project activities, travel time must be kept to a minimum. Personal contact among project participants must be close and frequent, communications open and easy, and specialized resources, both in personnel and equipment, readily available to all if the project is to develop the unity of purpose and cohesiveness which it will surely require. As the project becomes established (Time Phase II), however, the geographic area will widen to include all of Regions 9 and 10 in selected educational

activities that are deemed both appropriate and feasible. Certain ideas and activities which may have usefulness for other parts of the nation will be disseminated during Time Phase II, or later (Time Phase III). (See Chart 9.)

Thus, the Rural Educational Development Complex (REDC) now assumes a more specific identity: The Northeast Educational Development Complex (NEDC). Its identity is not given to a single institution or campus, but rather to a complex of institutions and sub-centers, some already in existence and others to be built, that are part of what might be envisioned as a Khon Kaen-Maha Sarakham axis.

B. Curriculum Development and Textbook Writing

Textbook writing is a multi-faceted operation. To make each facet more vivid and clear, this section resorts to a format of broad questions. Before beginning, however, it should be pointed out that the textbooks, teachers' guides, tests, and other materials to be developed are intended, at least initially, for only the pilot area. Administrative approvals required at various stages in the development of these materials are presented in the next chart and elaborated upon under subsequent headings of this section.

1. Goals and Objectives: Where to Start?

The first task of the pilot project is to concentrate on the

writing and development of textbooks and teachers' guides. However, to do this it is absolutely essential that general learning goals and specific student behavioral objectives be clearly identified. The curriculum and instructional materials currently in use should then be studied and analyzed. Next comes the difficult and time-consuming job of developing a revised curriculum designed to achieve the agreed-upon objectives, and presenting it in textbook and teachers'-guide form. Illustrated on the next page is a sample chart depicting the numerous functional operations involved in the preparation and production of textbooks. (See Chart 10.) Just a rapid perusal of the chart should immediately make one point fully obvious: coordination, teamwork, and timing are indispensable elements.

2. Strategy Options: Which Approach?

Elementary curricula in our age can take many forms: an individual subject approach (e.g., presenting subjects separately such as Thai, science, art); a fused-subject approach (e.g., combining Thai language arts with social studies); a center of interest or experiential approach (e.g., starting with a child's experience or strong area of interest, say, in taking care of a pet or going to market); an integrated approach (e.g., combining several subject areas); a graded approach (.e.g., preparing materials for one particular grade level, say Prathom 1); an ungraded approach (e.g., developing materials that can

CHART 9

NORTHEAST EDUCATIONAL
DEVELOPMENT COMPLEX (NEDC)
TIME PHASE II
(Selected project activities are extended throughout Education Regions No. 9 and 10)
TIME PHASE I
(Pilot project begins in vicinity of Khon Kaen - Maheserakham axis.)
TIME PHASE III
(As project develops, selected findings and activities are diffused nation-wide.)
THAILAND

CHART 10

TEXTBOOK PREPARATION AND PRODUCTION CHART

Key: ⌣ Operation in progress
● Operation completed

Subject(s) of Textbooks and Teachers' Guides	No. of Textbooks	Grade Level(s)	No. of Teachers' Guides	FUNCTIONAL OPERATIONS: 1. Determine behavioral objectives	2. Review Committee approves objectives	3. Develop scope and sequence chart	4. Review Committee approves S & S Chart	5. Develop book outline	6. Write book	7. Initial art work & illustrations	8. Produce related instructional materials	9. Produce related tests	10. Edit book	11. Initial typing	12. Approval by Review Committee	13. Reproduction for Field Testing	14. Revisions based on Field Testing	15. Final approval by Review Committee	16. Final typing, art work, & editing	17. Printing of proofs	18. Proofing	19. Final Printing & Production	20. Teacher Training Session (Inservice)	21. Teacher Training (Preservice)	22. Distribution	23. Classroom Evaluation	24. Revisions for Second Edition	25. Approval by Review Committee	
Language Arts, Thai		P-1																											
" " "		P-1																											
Social Studies		P-1																											
" "		P-1																											
Science		P-1																											
"		P-1																											
Mathematics		P-1																											
"		P-1																											
Health and Physical Education		P-1																											
" " "		P-1																											
Arts and Crafts		P-1-3																											
" "		P-1-3																											
Music		P-1-3																											
"		P-1-3																											

p. 150 blank

be used at several grade levels depending on the ability and interest of individual pupils); and a dual-track approach (e.g., one track for pupils terminating formal schooling in Prathom 4 or Prathom 7, and another track for students continuing to post-primary levels of education).

Determining which approach or combination of approaches to adopt is a most critical decision and should be made only after the project team has assembled, has had time to discuss the pros and cons of each approach as they relate to Thailand, and has thoughtfully considered several alternatives. This process should not be hurried; it certainly should not be taken lightly.

3. Writing Priorities: Where to Begin?

Learning is a life-long continuum; it begins at birth and ends at death. Sometimes learning is sequential; it begins with the simple and gradually moves to the more complex. Thus, we learn "Thai I" before proceeding to "Thai II". Scope and sequence charts emphasizing spiral and structural approaches are generally utilized by curriculum specialists to facilitate sequential learning. Much learning, however, is not a matter of planned sequence; rather, it comes in the form of frequent bits and pieces, and sometimes in large more or less independent chunks, related to daily experience and to individual interest, needs, and circumstance. Thus, we need not wait for a

p 152 blank

curriculum for adults until the elementary curriculum is completed. Multiple starting places can and should be utilized. In any effective school system -- local, intermediate, or national -- curriculum reform and changes in textbooks and instructional materials take place on numerous levels and optimally in all academic fields at the same time. Naturally, depending on a variety of factors, progress in some fields will be greater than in others.

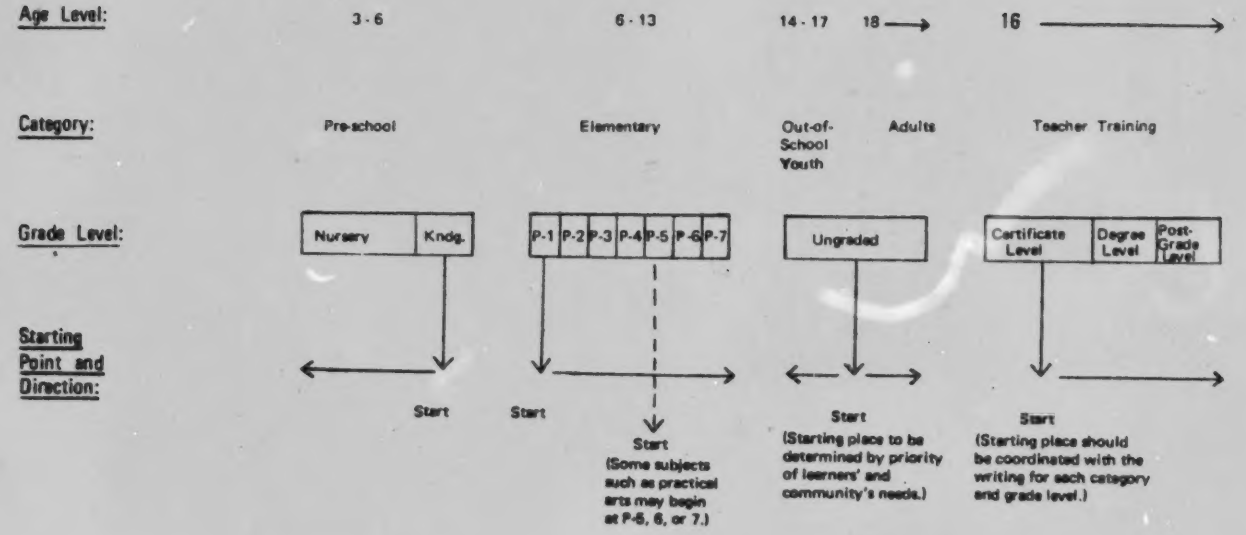
Extended discussions and thought are needed in a new pilot project to determine the places to begin textbook writing and reform. Therefore, again it is best to leave the final decision to the project team. However, it appears wise to plan the writing exercise, on tentative terms, along the lines diagrammed on the following page. (See Chart 11.) Four (4) major starting points, it should be noted, are suggested.

4. Establishing a Curriculum Development and Textbook Center (CDTC): Whom to Include?

Textbook writing involves a team effort. There is simply too much to know, to try to explain, to illustrate, to amplify, to reinforce, to test, and to evaluate for mastery by a single person. But numbers by themselves do not constitute a complete answer; quality is even more important. Listed below are criteria that should be kept uppermost in mind in selecting members of a writing team who will be part

CHART 11

TEXTBOOK WRITING: STARTING POINTS



of a sub-center (to the NEDC) to be named the Curriculum Development and Textbook Center (CDTC).

(a) Criteria for Selecting Thai Professional Writing Team Members

(1) Up-to-date knowledge in one or more subject fields;

(2) A skilled writer in the Thai language;

(3) A reasonable facility in handling the English language;

(4) A minimum of five years of successful experience in elementary education with a minimum of two years at the classroom teaching level;

(5) Preferably a minimum of three years of successful experience in some phase of teacher education;

(6) Preferably a Master's or Doctor's degree in the assigned field of work;

(7) A strong commitment to the rural sector;

(8) A creative and imaginative flair for ideas, writing, and possibly illustration;

(9) Preferably some previous experience in writing elementary school materials;

(10) An ability to work in a team effort;

(11) A personality and disposition that fit well with people of diverse cultures; and

(12) Preferably a willingness to spend a minimum of two years working on the project and living in a rural area.

(b) Criteria for Selecting External Specialists

Foreign specialists who are team members should meet all the above-named criteria except for the speaking and writing of Thai -- which, of course, if possessed would be most useful. Additional criteria for foreign specialists follow:

(1) Preferably several years of professional educational experience in a developing nation;

(2) A broad background in education with highly specialized knowledge and experience in one or more specific fields;

(3) High quality skills in curriculum development, organization, and professional writing with emphasis on the elementary and teacher training level;

(4) A task-oriented capability for stimulating practical ideas, making specific proposals, interrelating theory and practice, asserting initiative, and meeting production deadlines; and

(5) The ability to work in a helping, consultative relationship, without having to dominate, under local leadership and direction.

The criteria above, to say the least, constitute a large order. It is rather unlikely that any single individual, Thai or foreign, will fully satisfy all of them. They do, however, serve as a guide to staff

selection which in the final analysis will determine the productivity and worth of the project.

5. Team Composition: Who and How Many?

On the next page is an open outline chart identifying the specific writing teams and the recommended number of Thai professional educators and contract specialists to be assigned to each team. (See Chart 12) The teams, it will be noted, vary in size because of the degree of importance and complexity attached to each field of study. The number of years for which each external specialist will be needed also varies. (See Chart 19 in Section VII dealing with quantified inputs.) Since it is impossible to predict future difficulties and obstacles, the productive speed of each curriculum writing team, and likely spin-off, all figures related to the numbers assigned to a team, or the specific years of assignment, should be interpreted as initial figures required to launch the project, but figures that will require periodic review and evaluation as the project grows and develops.

6. Team Leadership: Who is Responsible?

Each team will be headed by a Thai chairman. The Thais will be responsible for all final decisions in all operations. They will do the bulk of the writing, editing, teaching, evaluating, revising, and printing of all books. The external specialists will assist in formulating curriculum strategies and designs; developing scope and sequence

charts; determining textbook formats and organization; establishing systematic research-oriented procedures in the writing, field testing, and production of textbooks, teachers' guides, and related instructional materials; providing practical suggestions on teacher training and student learning activities related to each curriculum unit; making available relevant and up-to-date information related to a professional library, bibliographies, recent publications, and research findings; and serving as a resource person to all members of his writing team and, at times, to members of other teams as well.

C. Instructional Materials Development

All modern curriculum reform movements have been accompanied by heavy inputs of instructional materials, both hardware (machines and equipment) and software (content and programs). More and more, it is being recognized that appropriate materials can help both young people and adults to learn faster and better -- and often at cheaper cost in terms of the amount of learning produced. Sketchy descriptions of three current programs emphasizing media and technology are given below.

1. An International Sampling

A recent forward-looking and far-reaching handbook on materials and educational technology presents case studies of projects now in

CHART 12

CURRICULUM DEVELOPMENT AND TEXTBOOK WRITING TEAMS

(In addition to the full-time personnel listed below, it is expected that each team will make use of part-time field workers and consultants. Service teams required by the writing teams as well as by other project activities and centers are listed on page 2 of this chart.)

WRITING TEAMS

A. LANGUAGE ARTS (THAI)

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(Thai)
(5)		(Thai)
(6)		(Thai)
(7)		(External Specialist)

B. LANGUAGE ARTS (ENGLISH)

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(External Specialist)

C. SOCIAL STUDIES (INCLUDES THAI CULTURE AND RELIGIOUS STUDIES)

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(Thai)
(5)		(Thai)
(6)		(External Specialist)

D. MATHEMATICS

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(Thai)
(5)		(Thai)
(6)		(External Specialist)

E. SCIENCE

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(Thai)
(5)		(Thai)
(6)		(External Specialist)

F. HEALTH AND PHYSICAL EDUCATION

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(Thai)
(5)		(External Specialist)

G. ARTS AND CRAFTS

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(External Specialist)

H. MUSIC AND DRAMATIC ARTS

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(External Specialist)

I. PRACTICAL ARTS, BOYS

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(External Specialist)

J. DOMESTIC ARTS, GIRLS

(1)	(Chairman)	(Thai)
(2)		(Thai)
(3)		(Thai)
(4)		(External Specialist)

continued

WRITING TEAMS
continued

*K. KINDERGARTEN AND PRESCHOOL EDUCATION

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)
(5) _____ (External Specialist)

*L. NONFORMAL AND ADULT EDUCATION

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)
(5) _____ (Thai)
(6) _____ (External Specialist)

M. TEACHER EDUCATION

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)
(5) _____ (Thai)
(6) _____ (External Specialist)

SERVICE TEAMS

N. RESEARCH, TESTING, AND EVALUATION

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)
(5) _____ (External Specialist)

O. INSTRUCTIONAL MATERIALS

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)
(5) _____ (External Specialist)

P. MASS MEDIA

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (External Specialist)

Q. CURRICULUM COORDINATION, SUPERVISION, AND GUIDANCE

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (External Specialist)

R. ADMINISTRATION AND FIELD LEADERSHIP

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Field Coordinator) (External Specialist)
(4) _____ (Chief of Party) (External Specialist)

SUPPORT TEAMS

S. PRINTING, PRODUCTION, AND ILLUSTRATION

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (External Specialist)

T. EDITORS, TRANSLATORS, AND INTERPRETERS

(1) _____ (Chairman) (Thai)
(2) _____ (Thai)
(3) _____ (Thai)
(4) _____ (Thai)

U. SECRETARIES AND TYPISTS

(1) Full-time (12) (Thai)
(2) Part-time (9) (Thai)

V. DRIVERS

(1) Full-time (4) (Thai)

*Both these fields are vast, complex, and, throughout the world, still in the early stages of development. They both involve millions of people; they both require considerable experimentation and research; they both possess immense potential. Therefore, the numbers assigned to each team here are not commensurate to their importance; rather, they should be interpreted as representing only advance exploratory groups seeking to demonstrate (1) the continuous relationship between formal and nonformal education, (2) education as a life-long exercise, and (3) the importance of educators and community leaders working and planning together.

progress in El Salvador, Niger, American Samoa, Mexico, Colombia, and Singapore that are heavily committed to improvement in education through modern technology. The writers, however, present a word of warning:

> "Educational technology will bring optimal benefits if it is planned as part of a wide reordering of education -- change in teaching methods, in curriculum, in the teacher's role, in standards of achievement ....
>
> "The basic assumption .... is that technology, if it is to substantially improve learning and teaching, must be embraced in a system -- a redesign of the conditions of learning that integrates the reform of all aspects of education."(1)

Bold, innovative programs aimed at accelerating individual learning and curriculum reform, and at the same time possibly reducing financial costs, basically through the medium of television were launched in Niger in 1964 on the elementary school level, and in El Salvador in 1968 on the junior high school level. The programs are currently in full swing, and evaluation studies are increasing in intensity as the programs grow and mature. Both programs bear watching; they may very well provide useful ideas and practices for

(1) Academy for Educational Development, Inc., Educational Technology and the Developing Countries, U.S. Agency for International Development, Washington, D.C., 1972, pp. 9 and 52.

future educational developments related to the activities of the Northeast complex.[1]

2. Thailand

The Institute for the Promotion of Teaching Science and Technology, opened at Chulalongkorn University in 1972, places a high priority in its program activities, staffing, and budget on multi-media design, evaluation, and production.[2] The Institute, partially financed by a UNESCO grant, is composed of six curriculum design teams (Chemistry, Physics, Biology, General Science, Mathematics, and Teacher Training) and four service teams (evaluation, equipment design, audio-visual, and library). The major curricular emphases are science and mathematics at the secondary and teacher training levels. UNESCO support, begun in January 1971, is expected to continue at least until the end of 1979, a period of nine years.

3. West and East Africa

The Educational Development Center (EDC), a highly innovative

(1) For a documentary 16 mm. film of the Niger and El Salvador programs, see "Classroom Television: Instrument for Educational Change", produced for the AID Technical Assistance Bureau by the International Cinemedia Center through the Academy for International Development, Inc., June 1972.

(2) Institute for Promotion of Teaching Science and Technology, "Draft Workplan", Ministry of Education/UNESCO, Bangkok, June, 1972.

and pioneering curriculum organization with an international focus, has helped to promote a variety of impressive programs in elementary science in both West and East Africa by concentrating on five key areas; curriculum relevance to rural societies, the discovery method, low-cost student experimentation materials, economical, soft-cover student pamphlets (each containing a single unit of study) and teachers' guides, and short-term inservice workshops planned on a national scale.[1] Literally, dozens of students' books and teachers' guides have been written on practical, down-to-earth, topics of everyday concern to African children living in rural areas. A few book titles follow:

Pupils' Books:

- Making Things Look Bigger -- Making a Microscope
- Exploring the Local Community
- A Scientific Look at Soil
- Seeds
- Woodwork
- Cooking
- Arts and Crafts

(1) African Primary Science Program, Programming for Change in Science Education and Inservice Training of Teachers and Evaluation of the African Primary Science Program, Education Development Center/USAID, Newton, 1970.

- Measuring Time
- How the Sky Looks
- Buds and Twigs
- Mosquitoes
- Chicks in the Classroom
- Colors, Water, and Paper
- Wheels
- Balancing and Weighing

The point should be clear, even though the examples cited are few in number and cursory in description, that curriculum improvement is hardly possible without the strong support of instructional materials. As the curriculum writing teams produce their new textbooks and teachers' guides, they will surely call for many kinds of related materials to make the pages which they have written come alive. All kinds of charts will be needed, maps, wooden or soft-board meter rules, groups of sticks to explain the mathematical concept of sets, various geometric models, aquaria, penmanship wall charts, rock assortments, and three-baht telescopes; even stones, sand, grass, and wire; and also slides, film strips, overhead transparencies, sound recordings, and video tape. Educational media form a truly fascinating spectrum in variety, function, and cost, in the old and the new, the simple and the sophisticated.

4. Establishing a Rural Instructional Materials Center (IMC)

In order to implement the work of the Curriculum Development and Textbook Center (CDTC) and the Inservice Education Center (IEC), to be described in the next section, also to act as a permanent center for research and development activities in educational media and technology in the Northeast Region, and to serve as a field unit to implement goals and objectives of the Department of Educational Techniques in the capital, an Instructional Materials Center (IMC) will be organized and established. As the name implies, the Center will assume responsibility for two broad, interrelated areas: instructional materials/technology and printing and graphic arts production. The Center will be assigned the following immediate and long-range functions:

(a) Immediate Functions

(1) To work closely with the textbook writing teams in designing, preparing, testing, evaluating, and producing a variety of instructional materials to complement the new curricula;

(2) To assist the textbook writing teams with design formats, illustrations, and publication of initial field-test editions and written materials; and

(3) To serve as a rural extension agency for the Department of Educational Techniques in implementing Department policies, providing assigned services, and coordinating central office-field efforts.

(b) Long-range Functions

(1) To continue fulfilling the functions described above but to extend their area of impact to include the entirety of Regions 9 and 10;

(2) To work closely with the Inservice Education Center (IEC) to improve experienced teachers' knowledge and use of instructional materials suitable for their students and locale;

(3) To coordinate efforts with the audio-visual and technology centers of the colleges and universities in the area with the intent of improving services and the quality of teaching and learning;

(4) To develop and maintain a regional multi-media library, to provide consultant assistance through a highly specialized staff, to promote and coordinate varied mobile services (mobile libraries, rotation schemes for 16 mm. films, specialized exhibits on wheels, etc.), to conduct demonstrations and workshops, to acquire and make available needed specialized equipment, and to conduct in cooperation with interested individuals and institutions experimentation and research in relevant multi-media fields.

D. Inservice Teacher Education

In our current modern world where change is so rapid and constant it is essential for professionals in any occupation to engage in some form of continuing education. Teachers on the elementary, secondary, vocational-technical, and teacher training levels -- and in fact also the university level -- regardless of whether they hold the lowest certificate or a Ph. D., are considered qualified to begin their professional careers in the classroom. To continue in their teaching, however, and to become increasingly effective they must continue to study and learn.

Thailand, with its 200,000-plus teachers on all levels has for many decades been providing varied programs in inservice education. These programs have been directed not only to teachers on all levels, but also to teacher trainers, specialists, supervisors, and educational administrators. However, because of the scarcity of time, teaching personnel, and money, these programs have been limited in frequency, scope, and effectiveness. A more comprehensive and systematic approach is badly needed. Unless such a program is soon forthcoming, there is small hope of upgrading the quality of the nation's 29,000 elementary schools where thousands of teachers are still unqualified, and where thousands more are only partially effective in terms of their true potential.

1. Establishing an Inservice Education Center (IEC)

For inservice education to be productive, it must be realistic. To be realistic it must take place in an environment that deals directly with the kinds of problems which the teacher faces daily. The NEDC, therefore, will include an Inservice Education Center (IEC), which will actually serve as a sub-center to the total complex.

(a) Basic Functions of the Center

(1) It will provide continuing education for teachers on all levels for supervisors and specialists, for adult education and community leaders, and for school administrators.

(2) It will re-cycle teachers and other professional educators working in Regions 9 and 10 perhaps every three to five years on a scheduled and systematic basis.(1)

(3) It will serve as a rural service and liaison agency for the Department of Teacher Training in implementing its policies and objectives, and in sharing its gigantic responsibility for upgrading teacher quality on a systematic and decentralized basis.

(1) For a detailed description of a recently-planned national re-cycling plan, see: Alice M. Miel and Henry J. Rissetto, A Study of Curricular and Facilities Factors Relevant to a Proposed Education Orientation Center at Bagamoyo, Tanzania, Teachers College, Columbia University, 1970.

(b) Characteristics of the Center

(1) The staff will be composed of some of the nation's best and most experienced teacher trainers representing all section of the country.

(2) Teachers (and others) invited to attend the Center will experience living and learning with fellow teachers in a new frame of reference, basically rural, for a period of four to six weeks where (i) they can evaluate the effectiveness of their teaching in their home setting, (ii) share their professional experiences with other teachers from other schools and regions, and (iii) plan ways and means of improving their performance after they return.

(3) Teachers will be given experiences that encourage them to appraise the relationship of their teaching to national objectives, values, and aspirations.

(4) Teachers will mix freely with a diversity of people representing many different sections of the land, and hopefully develop a deeper awareness of the need for cooperative planning and national unity.

(5) Teachers will be given short-term content courses to update their knowledge in specific subject-matter fields.

(6) Teachers will be exposed to new and improved methods of teaching which call for the use of a variety of educational aids

combining the best of locally-made materials with the best of relevant technological media.

(7) Teachers will be offered opportunities to discuss with their instructors, specialists, and possibly ministry and regional officials the special personal problems and difficulties which they face in their local situations.

(8) The teachers and staff will be learning and living in physical facilities designed to be functional in purpose, attractive in design, and economical in cost with the hope that specially-designed facilities for adult learners might serve as a model, with appropriate local adaptations, for the building of similar facilities, or remodeling of existing ones, in other regions.(1)

(9) The teachers, by virtue of the program, facilities, and surroundings, will be afforded opportunities for relaxation, social activity, and introspective thought to balance the inservice learning, to refresh the teachers' outlook and morale, and to make the total experience enjoyable as well as profitable.

2. A Broad Planning Approach for Designing an Inservice Center

As both the overall population and the number of teachers in Thailand continue their rapid growth, a decentralized inservice plan

(1) For a detailed description of the planning for such facilities, see Ibid., pp. 36-67.

for re-cycling teachers correspondingly grows in complexity and urgency. Local educational regions must be given more authority and resources which they must match with increased responsibility and planning efficiency. The IEC can usefully serve as a national prototype for the development of such a decentralization scheme.

Properly planned and developed, the IEC can have powerful impact on quality in education both regionally and nationally. Skillful planning calls for imaginative answers to questions that can be categorized under three broad areas of design:

(a) Conceptualization Design

What are the fundamental and subsidiary roles of the teachers, educational specialists, and administrators in Thailand? What are the various purposes that the IEC would serve? What kind of atmosphere would contribute to the fulfillment of these purposes? Who are the teachers who will be coming to the Center? How many? For how long? At what intervals? What are their backgrounds, expectations, and needs? What outcomes are expected from the Center? What kind of organizational structure and staffing pattern is required?

(b) Curriculum Design

What kinds of courses are most valuable for experienced teachers, most of whom come from the rural sector where one of their major responsibilities is community leadership? How should these

courses be taught? What kinds of co-curricular experiences are needed? What specialized equipment or instructional materials are required? How long should the courses be? What innovations in content, method, or facilities should be introduced? How should teachers be selected? How should they be grouped? What new approaches can be introduced in time-tabling or scheduling?

(c) Building Design

How can the physical facilities be adapted to fulfill the national purposes of the Center, and also to enhance the effectiveness of the curriculum offerings? What special facilities are needed? How can flexibility be given to space allocation and management? How can a building be made functional, economical, and yet attractive? How can a master building plan provide for both current needs and future expansion? What kind of a story should the building facilities tell? Are there existing buildings that might be adapted and remodeled?

These are the kinds of questions which need to be answered in specific terms by Thai leaders directing the project in the field and in Bangkok. As answers are found and approvals received, a site should be selected, educational specifications written, schematics and working drawings developed, construction started, and educational programing expanded and refined.

3. Sub-center Summary: A Diagrammatic View

The IEC is the last of three centers around which major activities will revolve in the Northeast Educational Development Complex (NEDC). The two charts which follow (See Charts13 and14.) present a diagrammatic view of these centers, first in blown-up scale and then as part of the total geographic region. Administrative considerations, priority order, and estimated costs are treated in subsequent pages of this section and the section that follows.

E. Consultants and Participants

1. Short-term Consultant-Thai Counterpart Teams

The knowledge explosion, which has ushered in our modern, technological age, has also brought with it the need for deep and narrow specialization. And specialization has given birth to what is popularly coined, "The Age of the Consultant". Now, admittedly, some consultants are little more than carriers of the ubiquitous attaché case and impressively styled name cards. But they can be more -- much more. Effective consultants who know their business, and who can impart it, can accelerate progress, telescope time, and save nations or institutions literally millions of dollars. Thus, it is not surprising that consultants, or whatever name they are assigned, are on the run every day, in every corner of the world, advising on topics as diverse as

surgical operations, dam construction, monetary investment, pollution eradication, and strategies for war and peace.

This project in earlier pages has called for the use of consultants or specialists on a long-term basis, that is for a period of two or more years. This section emphasizes the need and value of short-term consultants, most of whom would serve for a period of two to four months.

Education, especially in the past two decades, has become increasingly complex and specialized. Many new fields, practices, and materials, unknown only ten or twenty years ago, have emerged on the educational scene with promising prospects. Many old concepts, procedures, and materials have been discarded or considerably revised. Highly experienced consultants, armed with the latest specialized knowledge in specifically selected areas and working in close concert with local educational leaders, it is felt, can make a significant contribution to modernization efforts in Thailand. Program characteristics related to use of the consultants follow:

(a) Examples of specialized areas of education with special emphasis on teacher education, calling for particular expertise, equipment, or materials, are presented in the chart that follows. (See Chart 15.)

CHART 13

DIAGRAMMATIC VIEW: NEDC SUB-CENTERS
AND THEIR MAJOR FUNCTIONS

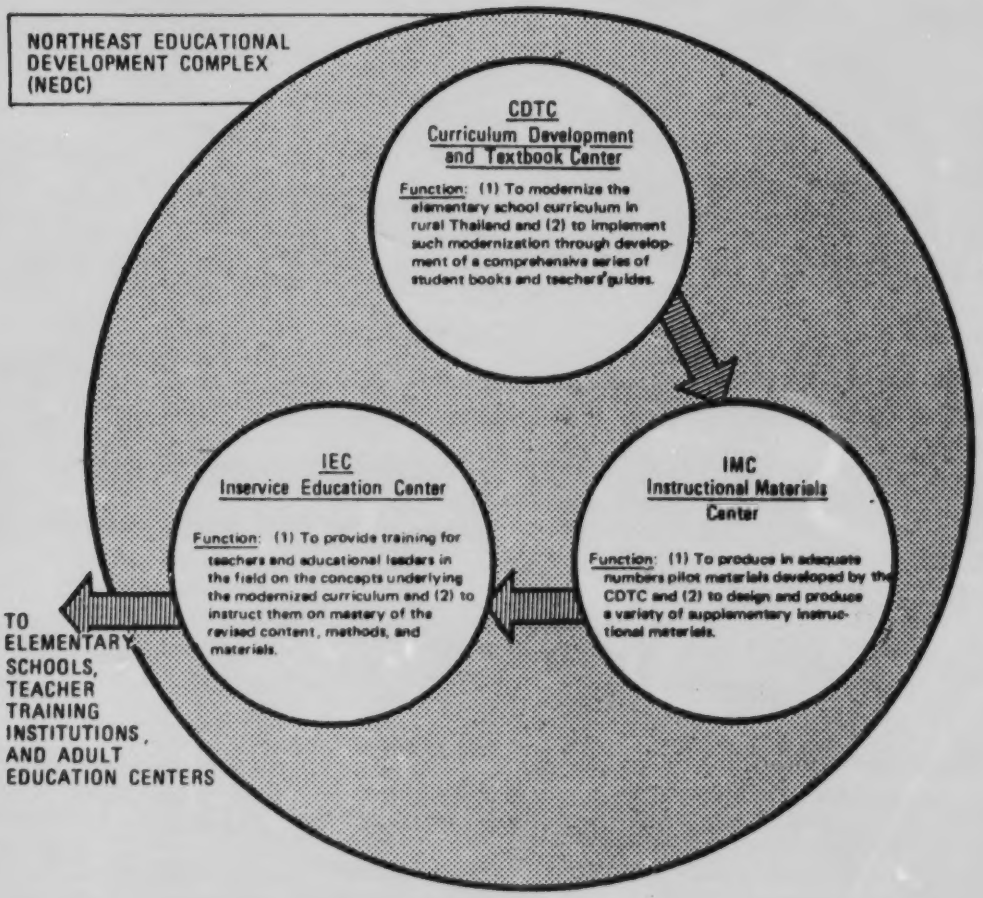
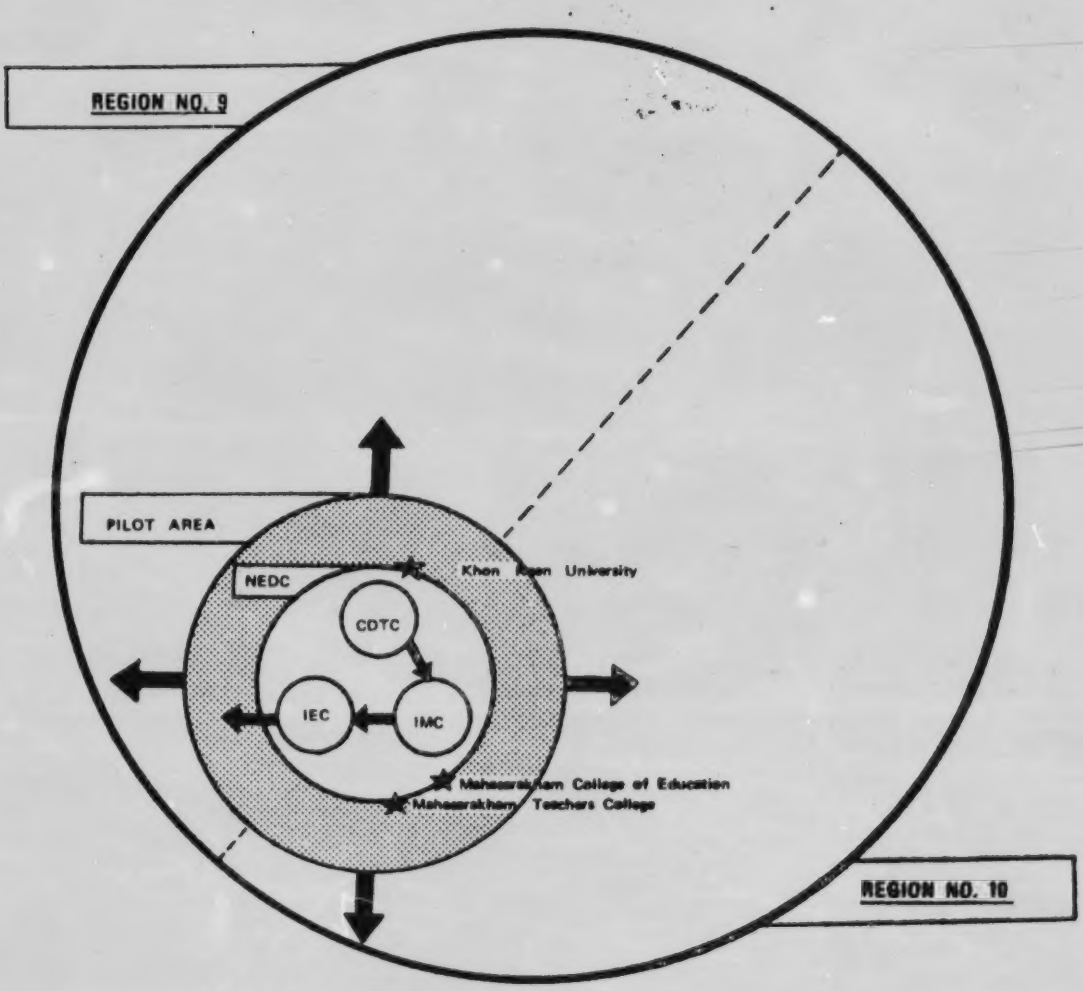

NORTHEAST EDUCATIONAL DEVELOPMENT COMPLEX (NEDC)
CDTC
Curriculum Development and Textbook Center
Function: (1) To modernize the elementary school curriculum in rural Thailand and (2) to implement such modernization through development of a comprehensive series of student books and teachers' guides.
IEC
Inservice Education Center
Function: (1) To provide training for teachers and educational leaders in the field on the concepts underlying the modernized curriculum and (2) to instruct them on mastery of the revised content, methods, and materials.
IMC
Instructional Materials Center
Function: (1) To produce in adequate numbers pilot materials developed by the CDTC and (2) to design and produce a variety of supplementary instructional materials.
TO ELEMENTARY SCHOOLS, TEACHER TRAINING INSTITUTIONS, AND ADULT EDUCATION CENTERS

CHART 14

DIAGRAMMATIC VIEW: THE NEDC AND PARTICIPATING INSTITUTIONS WITHIN A REGIONAL CONTEXT



p. 178 blank

CHART 15

SPECIALIZED AREAS RELATED TO THE IMPROVEMENT OF EDUCATION WITH EMPHASIS ON TEACHER EDUCATION

A. Uses of Video Tape in Improving Teacher Training and Instructional Supervision
B. Development of TOESL and TOEFL Materials
C. Development of Evaluative Criteria for Teacher Training Institutions
D. Techniques in Small and Large Group Instruction
E. Uses of Micro-Teaching
F. Development of High Interest-Low Readability Reading Materials
G. * Adaptation of U.S. Audio-Visual Aids for Local Use
H. Approaches for making the Rural School a Community Center
I. Evaluation of Teacher Competence
J. Writing of Performance Objectives
K. Uses of Closed Circuit TV in Teacher Training
L. Development and Implementation of the Case Study Method
M. Design, Production and Evaluation of Low-Cost Instructional Materials
N. Organization, Administration, Process and Materials Related to Academies and Workshops for Education Leaders
O. Techniques in Sensitivity Training
P. Approaches to More Functional School Design
Q. Techniques in Schedule-Making
R. Development and Use of Modern Instructional Media
S. Hardward, Software and Techniques (Including Dial-Access Systems) Related to Sound Laboratories
T. Promising New Models and Approaches in Teacher Education
U. Productive Activities, Processes and Materials in Adult Education (Especially Functional Literacy and Non-Formal Education)
V. Simulation and Gaming
W. Differentiated Staffing
X. Non-Verbal Communication
Y. Linguistic Analysis and Teacher Education
Z. Interaction Analysis
AA. A Systems Approach to Teacher Education
BB. Research Design
CC. Certification/Licensing of Teachers
DD. Teacher Centers

---

* In this area alone, it is estimated that there are millions of dollars worth of excellent educational films and film strips that would be appropriate for many cultures if the sound track were changed to fit the language of these cultures.

p. 180 blank

(b) Selected consultants would be utilized to add a highly specialized dimension to the overall pilot project. However, depending on the judgement of national educational leaders, their services might readily be extended to cover additional institutions and a broader geographic area.

(c) To exploit, in the best sense of the word, the talents of each consultant it is essential (1) that Thai counterparts be assigned to work closely with him to ensure adequate preparation before his arrival, and continuity in program after his departure; (2) that the program design outlining objectives, procedures, deadlines etc., be highly concrete and explicit to maximize highly limited time and high-cost resources; (3) that while some preparation is required abroad, the bulk of the work will take place in Thailand within the full context of Thai society and culture; and (4) that provision be carefully made for a reasonable level of program continuity -- through trained local personnel, specialized library and equipment, etc. -- after the consultant completes his assignment.

(d) In order to determine which particular specialized areas are of most importance to the nation, and which individuals and institutions seem most compatible with Thailand's needs, a small(three-or four-member) high-level team of local educational leaders should visit one or two consultants and/or institutions closely identified with selected

specialized areas of high priority. The visits should not be restricted to any one nation. On the basis of such a first-hand study tour, which should make provision for stays of two to three days at each resource center, (for a total of about three months), a future program concerning consultant use could be arranged.

(e) After specific specialized fields have been identified as being important to the nation's educational development, and after foreign consultants have been tentatively chosen, one Thai educator who currently occupies a decision-making post at a high position level, who may or may not be a member of the pilot project directly, and who in most cases is a holder of a Master's or Doctor's degree, should be assigned to each consultant. The Thai-foreign consultant team would operate in this fashion:

(1) The selected Thai educator, with the assistance of co-workers, would develop an initial study proposal indicating background information, objectives, needs, etc. in a specific and specialized problem or development area;

(2) The Thai educator would enter into written dialog with the consultant to refine the proposal;

(3) The Thai educator would then visit the consultant, make further refinements in the proposal, visit projects and institutions conversant with the problem area, hold conferences with other experts,

and examine and collect related materials, library references, and professional publications;

(4) The Thai educator would return home (after a period of two to four months) and begin work with a larger local committee to address the problem (e.g., developing evaluative criteria for all teacher training institutions);

(5) The Thai committee would seek ideas and inputs from many sources, especially those in teacher education (assuming the problem area deals with teacher training college evaluative criteria);

(6) The consultant would then arrive some weeks or months later to work with the local team and to complete assigned objectives (e.g., within three months to complete a first draft of evaluative criteria for teacher training institutions);

(7) The consultant would leave and the Thai committee begins field testing evaluative criteria;

(8) Further consultations, most probably by mail, would take place between the consultant and the local team to sharpen and refine the evaluation instrument;

(9) Presentations would be made to wider and more diverse groups of teacher educators to acquire further suggestions and recommendations; and

(10) Printing of evaluative criteria would then take place followed by inservice training sessions, utilization, feedback, revision, and then a repeat of the entire process.

(f) The fundamental aims of the consultant-Thai counterpart approach are four-fold: (1) to emphasize specific skills and applied technology, (2) to accelerate development by taking fullest advantage of the advances made by specialists who in many cases have devoted a considerable part of a life-time concentrating on one or more highly specialized fields, (3) to stress the temporary role of the consultant as opposed to the permanent role of the Thais, and (4) to highlight the importance of most of the research and development being conducted in an indigenous setting.

(g) The success of the consultant-Thai counterpart approach depends predominantly on two factors: (1) the talent and skill of the consultant, and (2) the position and ability of the Thai leaders. Concerning the latter point, sight must not be lost of the fact that the higher the Thai job post and professional competence, the more likely the opportunity for productive and lasting change.

2. Participant Training Opportunities

A good number of the Thais serving on the writing teams, or attached to one of the three service centers, will be consultants and specialists in their own right. Some, however, will be individuals with

considerable professional potential but with limited job experience. Of this latter group, most will be holders of a Master's or Bachelor's degree with academic aspirations for earning the doctorate. By associating full-time with the project, the individuals in this group will continue to draw a full salary while securing, at the same time, a challenging internship experience. They will be deeply involved in activities of high priority value to the nation; at the same time they will work day by day, and side by side, with some of the top-flight educators from Thailand and abroad.

Beyond advantages to the nation and the individuals (or interns) concerned, it is hoped to find a foreign university, some of whose members are attached to the project, that will: (a) provide the interns with guidance and direction related to selected project activities that may also serve the purpose of contributing to an advanced degree, (b) grant partial academic credit for the successful performance of such activities, and (c), most important, allow the interns to develop a doctoral dissertation proposal in Thailand, collect data here, conduct research here, and complete most of the writing here. The intern would then, after completing all these tasks, enroll directly in the university, pass the various required examinations, and complete the expected academic courses.

Opportunities for allowing either academic credit and/or research writing and activity, based on field experience here in Thailand, to be

acceptable for university credit abroad would naturally entail (a) the university's acceptance of what might be called an overseas off-campus scheme, (b) supervision and approval of the interns' performance in the field by a senior member of the university staff (and possibly a Thai leader or supervisor), (c) a quality of work commensurate with the doctoral level, and (d) opportunity for the selected interns to travel to the designated country and to complete the prescribed program. It is not expected that all project workers with doctoral aspirations will qualify for eventual admission to a university advanced degree program. Only those who demonstrate considerable professional potential in their daily field performance will be selected.

The participant training facet of the pilot project should accomplish five principal objectives:

(a) It should provide promising young local educators with participant training on an internship basis, with a strong rural elementary education bias, right within their own country.

(b) It should allow Thai villagers to profit directly from research and development activities focusing directly on their needs and problems and conducted in their own geographic area.

(c) It should serve as an incentive for promising local educators to serve their nation and possibly to get an advanced degree abroad.

(d) It should serve as an excellent grooming experience for local teachers' colleges and the university in their own efforts to upgrade their skills and extend their services in field research and program development.

(e) It should provide the post-graduate division of the teacher training institutions in the pilot area with a strong nucleus of professional staff--made up of individuals with both up-to-date advanced academic degrees and an intimate working knowledge of the rural area -- who are capable of offering programs of study in rural Thailand at the Master's and Doctor's degree level.

F. Organization and Administration

The Northeast Educational Development Complex (NEDC) is a creation of the Ministry of Education in Bangkok. Governmental policy and practice are clear in the legal fact that while the Ministry can delegate certain tasks and authority to various institutions and political sub-divisions, it can never relinquish ultimate responsibility for the institutions it has helped to bring into being. And with ultimate responsibility there must logically follow ultimate authority and control.

Nevertheless, the Ministry is establishing the NEDC as a semi-autonomous agency. It recognizes that the assumption of responsibility is most difficult, and sometimes impossible, without a matching measure

of authority. It recognizes also that efficient administration, especially in new and innovative ventures, will surely require numerous on-the-spot decisions requiring an intimate understanding and knowledge of the local people, problems, and conditions that prevail at any particular time. Furthermore, the Ministry is quite aware that individuals develop responsibility only by being given it; that they learn to exercise power -- with restraint -- only by holding it in their hands; that they cultivate a spirit of pride only as they see the results of their work grow and prosper.

To ensure, therefore, a proper blend of centralized and decentralized authority and responsibility, two coordinating committees are proposed, one in the capital and the other in the pilot area. It cannot be overemphasized that the closest kind of relationship, based on open and candid dialog, is required to give the project the assertive, yet flexible and humane, leadership and direction it will demand.

The names, location, composition, and functions of each committee are listed below.

1. Central Coordinating Committee (CCC)

   (a) Location: Ministry of Education, Bangkok

   (b) Composition:

      (1) Under-Secretary of State for Education, Chairman

      (2) Director-General (or designee), Department of Teacher Training

(3) Director-General (or designee), Department of Educational Techniques

(4) Director-General (or designee), Department of General Education

(5) Rector or Vice-Rector of Academic Affairs, Khon Kaen University

(6) President (or designee), Prasarnmitr College of Education

(7) Director of the Supervisory Unit, Division of Elementary Education

(8) Director of Adult Education

(9) Director of the Planning Division, Department of Teacher Training

(10) Representative, Ministry of Interior

(11)

(12)

(13) External Representative

(c) Functions

(1) To determine overall policies and guidelines related to project organization, administration, and direction;

(2) To make final decisions concerning institutional and personnel selection, project priorities, general terms of service, and budgetary allocations;

(3) To modify, enlarge, or re-direct various activities of the project on the basis of periodic field visits, written reports by field leaders, evaluation studies, or new and changing demands; and

(4) To assume ultimate responsibility for supervision, evaluation, and auditing of the project.

2. Field Operations Unit (FOU)

(a) Location: The vicinity of the Khon Kaen-Maha Sarakham axis

(b) *Composition:

(1) Dean, Faculty of Education, Khon Kaen University

(2) Director, College of Education, Maha Sarakham

(3) Director, Teachers College, Maha Sarakham

(4) Director, Curriculum Development and Textbook Center

(5) Director, Instructructional Materials Center

(6) Director, Inservice Education Center

(7)

(8)

(9)

(10) External Representative

(*Chairman to be appointed by CCC.)

(c) Functions

(1) To direct and coordinate the daily operations, planning and program activities, and field evaluations of the NEDC in conformity

with project objectives and guidelines established by the CCC;

(2) To provide guidance and direction for all professional and supporting personnel attached to the project;

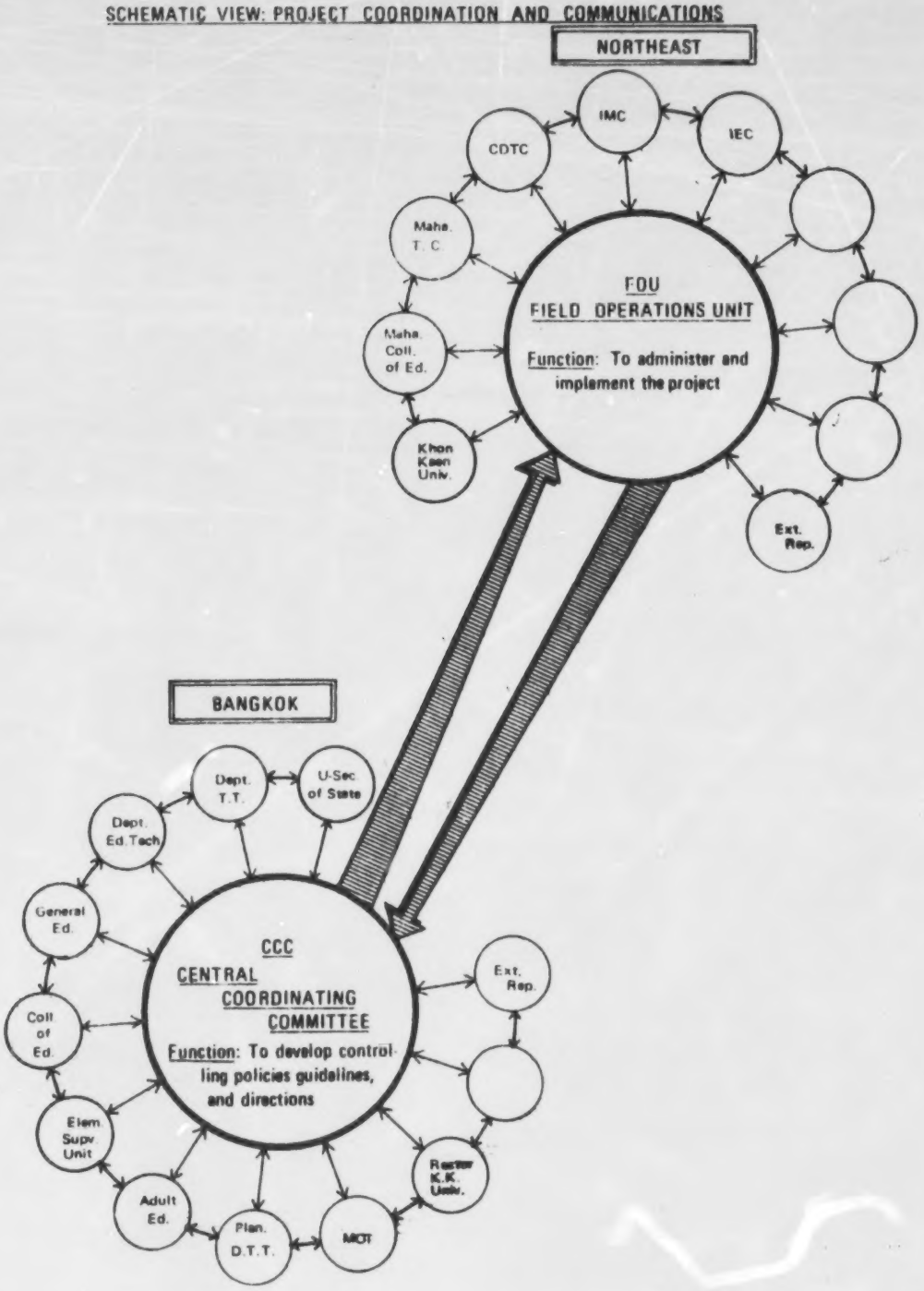
(3) To prepare reports and recommendations for the CCC on specially assigned topics; also to report periodically to the CCC, in written and/or verbal form, on the progress, problems, and needs of the project; and

(4) To serve as a field resource and liaison center for Ministry of Education and Ministry of Interior agencies in Bangkok for programs and activities of a rural nature.

The diagram on the next page gives a graphic view of the two-way communication flow between the two committees that will direct and operate the pilot project. (See Chart 16.) It also depicts the multi-dimensional communications expected to take place among the committee members who will represent a multiplicity of disciplines and departments.

CHART 16

SCHEMATIC VIEW: PROJECT COORDINATION AND COMMUNICATIONS



pp. 194 blank

Section VII

INPUTS, TIME PHASING, AND FINANCING

This section presents the inputs, both Thai and foreign, that are required to implement the project features described in the preceding section. The time periods during which these inputs will be needed, as well as financial requirements, are also given. Since the project involves long-range projections, modifications will be called for from time to time on the basis of possible work slippages, pace of production, spin-off activities, etc. Periodic evaluation is certainly required to guarantee that inputs are continually consistent with project priorities and demands.

A. RTG Inputs

1. Personnel

The RTG will supply 640 man-years of professional personnel in the fields prescribed in Charts 12 and 17 to work throughout the ten-year life of the project with the external specialists.

The RTG will provide part-time professional personnel to guide and direct the project as called for in Section VI, Part F.

The RTG will provide 207 man-years of supporting personnel (See Charts 12 and 17.) in the form of secretaries, typists, editors, translators, printers, illustrators, interpreters, and drivers.

pp 196-198 blank

Temporary or part-time supporting personnel will be hired as needed.

2. Commodities and Equipment

The RTG will provide the equipment and supplies for the preparation, printing, and distribution of all textbooks and instructional materials prepared by the project.

3. Facilities

The RTG will provide housing, office space, and local transportation.

4. Vehicles

The RTG will assume responsibility for the maintenance repair, and operational costs of all vehicles attained under the project.

B. External Assistance Anticipated Inputs

1. Personnel

An external assistance agency (or agencies) will supply 169 man-years of long-term (two-year contracts) educational specialists to work in Thailand under local leadership in the areas outlined in Charts 12 and 19.

An external assistance agency (or agencies) will supply 3 man-years of short-term (approximately three months each) educational consultants to work in one or more specialized areas listed under Chart 15.

2. Participant Training

An external assistance agency (or agencies) will provide pertinent training at the doctoral level for 20 qualified Thais in selected

curriculum and administrative fields shown on Chart 20.

An external assistance agency (or agencies) will provide pertinent participant training in the form of short, specialized courses, field visits, and/or study tours for 5 man-years for 16 qualified Thais serving on "Short-term Consultant-Thai Counterpart Teams" (described in Section VI, Part E) and for those serving on the writing, service, or support teams (See Charts 12 and 20.) where a short-term experience abroad is considered more appropriate than a long-term doctoral program.

3. Commodities and Equipment

An external assistance agency (or agencies) will provide basic instructional materials that include selected reference books, sample texts and prototype materials, experimental models, slides, training films, transparencies, audio and video tapes, professional subscriptions, test materials, office equipment and supplies.

An external assistance agency (or agencies) will provide four (4) vehicles for use by the writing and service teams to visit participating schools, and for project official business.

4. Conferences

An external assistance agency (or agencies) will contribute on a matching basis to the financing of costs for an annual nation-wide conference, or a series of regional seminars, to be held at the pilot

site, through which the problems, achievements, and research findings of the NEDC can be disseminated throughout the country.

5. Facilities

An external assistance agency (or agencies) will provide six (6) man-months for two (2) short-term consultants, for about three months each (See Chart 19.) in educational facilities design and curricular programs as they specifically relate to the Instructional Materials Center (IMC) and the Inservice Education Center (IEC) (both described in Section VI) to conduct a detailed study of the feasibility of these two centers, and if found feasible, to present a specific plan covering site selection, general design criteria, space allocations required to implement educational objectives, and next steps leading to construction.

C. Explanatory Input Data Charts

A summary of specific and concrete data concerning Thai and foreign inputs which have just been described are presented in the six (6) charts located at the end of this section. The charts are:

1. Chart 17 Thai Personnel: Staffing Requirements
2. Chart 18 Estimated RTG Baht Budget
3. Chart 19 External Personnel: Staffing Requirements
4. Chart 20 Participant Training Requirements
5. Chart 21 External Assistance Budget

6. Chart 22 Project Funding Summary (1973-1974)

D. Time Phasing

Presented below is a tentative outline of the phasing chronology for establishing the NEDC and for making it operational. The outline, it should be emphasized, is preliminary and suggestive; it will require adjustment and modification on the basis of unforeseen conditions and circumstances.

PLANNING PHASE I (6 months: March 1 to August 31, 1973)

Proposal Analysis, Sharpening, Approval, and Organization

1. Conferences for discussion, analysis, and refinement of project proposal by Ministry of Education, Ministry of Interior, and other Thai and external assistance agencies;

2. Appointment by the Under-Secretary of State, Ministry of Education, of a small, high-powered steering committee, with a Bangkok working office, to serve on a temporary basis in planning and guiding the project's early development;

3. Planned visits to the proposed project site by selected officials to determine the appropriateness and feasibility of the pilot area and the educational and community institutions located there;

4. A planned five-day visit by a team of four to six (4 to 6) high-level Thai educational planners to Kabul, Afghanistan to observe

and study firsthand the Ministry of Education "Curriculum and Textbook Project", started in 1967 and scheduled to end in 1980; the project includes a team of thirteen (13) contract consultants, forty-three (43) Afghan professional educators, and a local supporting staff of eighteen (18);

5. RTG preliminary negotiations with external assistance agencies seeking required funding to cover project costs;

6. A planned forty-five to sixty (45 to 60) day educational study tour by three or four (3 or 4) Thai educational leaders to South Korea (Project in Innovative Practices in Elementary Education), Singapore and Niger (the use of television in elementary curriculum reform), and in the United States to the American Association of Colleges for Teacher Education (AACTE), the Academy for Educational Development Inc. (AED), the Educational Development Center (EDC), and selected personnel and institutions representing the highest priority areas of educational specialization listed on Chart 15;

7. Development of a formal proposal, final approvals by the RTG and foreign assistance agencies, and writing and signing of official contracts;

8. Close cooperation and coordination, starting in the project's earliest stages, with external assistance agency (or agencies) and contractor(s) to make certain that a clear understanding is reached

concerning the specific nature and needs of the project and the kind and quality of professional workers needed to make it succeed. (Too often projects do not attain their full potential because of a serious gap in understanding, perception, and expectation between the country making a proposal and the agencies or contractors attempting to assist in its implementation.); and

9. Cooperative selection by contractor(s) and the RTG of eight (8) specialists listed on Chart 19 to arrive in Thailand by August 31, 1973 to begin work on the project with a cadre of selected Thai leaders and specialists listed on Chart 17.

PLANNING PHASE II (9 months; September 1, 1973 to June 30, 1974)

Project Planning and Preparation

1. Organization of the Central Coordinating Committee (CCC) and appointment of a Thai director to head the Field Operations Unit (FOU);

2. Organization of the FOU which will hold periodic meetings and report at assigned intervals to the CCC on its progress, problems, and next steps;

3. Determination of salaries, living conditions, job incentives, and terms of service for project personnel by the CCC;

4. Nomination of professional and supporting project personnel -- to serve as an advance planning team--by the FOU with final approval by the CCC utilizing criteria in Section VI, Part B;

5. Administrative arrangements and temporary or final decisions related to the location of the three sub-centers (CDTC, IMC, IEC), office space, printing and publication services, transportation, clerical assistance, housing (including size, type, and location), telephones, office equipment and supplies, etc.;

6. Selection of cooperating schools (e.g., elementary schools to field-test materials), adult agencies, community groups, etc., and the development of initial working relationships with their administrative personnel and staffs;

7. Collection of research and baseline data related to current conditions, practices, and levels of achievement;

8. Accumulation of a library of books, references, syllabi, instructional materials, etc. required for the project;

9. Development of a resource file of people, projects, materials, and institutions, both regionally and nationally, which project personnel might utilize in the conduct of their writing and research;

10. Design of a concrete and specific work plan, including behavioral objectives and scope and sequence charts, to accelerate the work of the writing teams (following their arrival around July, 1974) and the three sub-centers;

11. Planning of an in-country orientation program for both Thai and foreign personnel shortly after their arrival at the Complex;

12. Promotion of a professional public information program to instruct educational and community leaders concerning the objectives of the project, and to enlist their cooperation and support;

13. Selection of educational facilities design short-term consultants and, in close cooperation with them, produce a feasibility study indicating the size, nature, and location of the Instructional Materials Center (IMC) and the Inservice Education Center (IEC); the study should include educational specifications and a general operational plan; after careful deliberation, final decisions should be made by the CCC concerning their need, location, management, cost, financing, and a timetable for implementation; and

14. Completion of a concise yet explicit task agreement for the school design consultants, as well as for all other short-term consultants called for in the project, mutually agreed upon in advance of their arrival in Thailand; such an agreement should include specific purposes and objectives of the assignment, rationale, tasks to be completed, an activities calendar, target dates, personnel involved, and materials and funds required.

PLANNING PHASE III (Ten Years: July 1, 1974 to June 30, 1984)

Operational Phase

1. Completion of recruitment to fill all positions called for in the organizational chart (See Chart 12.) within six (6) months (by December 31, 1974);

2. Organization and staffing of three NEDC centers: the CDTC, IMC, and the IEC; paramount emphasis during the early months of the project should be focused on the CDTC where research and writing must begin before the other two centers can begin to operate; after the first textbooks -- trial editions -- are produced, all three centers can and should work simultaneously, and in close coordination;

3. Review of the overall work plan, including objectives and scope and sequence charts, developed by the advance planning team; revision and refinement of individual sections of that plan by each writing, service, and support team clearly spelling out planned outputs with an accompanying materials production schedule; submission of a detailed total project work plan covering all writing, service, support, and production areas to the CCC for its approval or revision within six (6) months (by December 31, 1974) and subsequent submissions at six-month intervals indicating the rate of progress in meeting project objectives and target dates;

4. Submission of work plan should include detailed information on student textbooks in all subject matter fields, teachers' guides, tests, instructional materials, teacher training materials, and, in required areas such as language arts, supplemental texts or readers;

5. Submission of work plan should include planned activities and time schedule for preservice and inservice education of teachers at certificate and degree levels concerning concepts underlying the new books and materials, new content, new method, and new approaches in evaluation;

6. Submission of work plan should also include plans for extending and diffusing the newly-produced student books, teachers' guides, and instructional materials beyond the immediate target area so as to encompass eventually the totality of Regions 9 and 10; such plans for diffusion should capitalize fully on political and community agencies and mass media;

7. Beginning of production side of project activities and operations during or upon completion of work plan; operations should begin with writing and research and the development of instructional materials; as books and materials are produced, production in amounts limited to try-out use should begin; then comes field testing, evaluation, revision, and finally production of revised editions in larger numbers for expanded use;

8. Production of final (revised) student books, teachers' guides, tests, supplemental texts and instructional materials and media are tentatively scheduled for completion at the rate of one grade level per year, or seven years for seven grades (Prathom 1 to Prathom 7) in the five major elementary school academic fields; Language Arts (Thai), Language Arts (English), Social Studies, Mathematics, and Science; a book and materials production rate covering one-and-a-half grade levels per year, or seven grades in about five years, is planned for the fields of Health and Physical Education, Arts and Crafts, Music and Drama, Practical Arts (Boys), Domestic Arts (Girls), and Kindergarten and Preschool Education; Nonformal, Adult and Teacher Education (both preservice and inservice), which represent vast and critical fields, should continue throughout the life of the project, should be coordinated with the testing and production of new curricula and materials, and should extend in nature and scope beyond the elementary program so as to reach effectively out-of-school youth, adults, and experienced teachers and trainees; Service and Support teams are required for the duration of the project to assist each writing team and to develop materials and activities related both to their field of specialization and to project objectives;

9. Study and analysis of the teacher education programs in the three participating teacher training institutions in the pilot area by the

Teacher Education team; this study should be conducted in close cooperation with the leaders and staffs of these institutions and with the assistance, as needed, of writing and service team membership; recommendations for improvement should be drawn up, discussed, and implemented; objectives should include more effective programs of training at the lower and upper certificate levels, the Bachelor's degree level, and the beginning of rural education programs at the Master's and eventually the Doctor's degree level;

10. Sponsorship, beginning in FY-75, of an annual nation-wide conference, or a series of seminars, at the NEDC to share with educational leaders and planners the findings and developments of the Complex, achievements attained, problems and difficulties encountered and future directions contemplated; and

11. Periodic evaluation of the total project, or of selected phases (discussed more fully in Section IX), as directed by the CCC or the FOU, is highly essential to ensure that the project (a) is on target with respect to objectives and deadlines, and (b) alert to difficulties, work slippages, unforeseen elements, etc. that may necessitate program adjustments and modifications.

E. Project Financing

To launch, operate, and guarantee a reasonable degree of success for a project of the magnitude and scope presented in this document, adequate and sustained financial support are indispensable. Such support must be sensitive to the following considerations:

1. The RTG is engaged in what appears to be an unending financial struggle to keep up with the quantitative battle of numbers -- more students, more books, more teachers, more classrooms, more everything.

2. To tackle more effectively the qualitative problem -- better informed students, better books, better curricula, better teachers, better schools -- considerable external assistance is needed. (See Chart 22.)

3. It is hoped that at least several donor agencies will find the dimensions and directions of the proposed project consistent with their own assistance strategies.

4. The Ministry of Education welcomes candid and constructive criticism of its proposal. Any project that hopes to succeed surely must stand the test of sober and detached scrutiny and judgement. This proposal is no exception. Changes must be made. But, then, action must begin.

5. This project represents a high-gain, low-risk venture. The Ministry believes it merits careful study and consideration, and then fast-moving yet well-planned and dynamically-directed implementation.

CHART 17

THAI PERSONNEL: STAFFING REQUIREMENTS

Area of Specialization	No. of Specialists	Man-Months per Fiscal Year										Total Man-Months
		74	75	76	77	78	79	80	* 81	* 82	* 83	
Writing Teams												
1. Language Arts (Thai)	6	36	72	72	72	72	72	72	72	72	72	684
2. Language Arts (Thai)	-	-	-	-	-	-	-	-	-	-	-	-
3. Language Arts (English)	3	12	36	36	36	36	36	36	36	36	36	336
4. Social Studies	5	12	60	60	60	60	60	60	60	60	60	552
5. Mathematics	5	12	60	60	60	60	60	60	60	60	60	552
6. Science	5	12	60	60	60	60	60	60	60	60	60	552
7. Health and Physical Education	4	12	48	48	48	48	48	48	48	48	48	444
8. Arts and Crafts	3	12	36	36	36	36	36	36	36	36	36	336
9. Music	3	12	36	36	36	36	36	36	36	36	36	336
10. Practical Arts, Boys	3	12	36	36	36	36	36	36	36	36	36	336
11. Domestic Arts, Girls	3	12	36	36	36	36	36	36	36	36	36	336
12. Kindergarten and Pre-School	4	12	48	48	48	48	48	48	48	48	48	444
13. Non-formal and Adult Education	5	24	60	60	60	60	60	60	60	60	60	564
14. Teacher Education	5	24	60	60	60	60	60	60	60	60	60	564
Service Teams												
15. Research, Testing, and Evaluation	4	48	48	48	48	48	48	48	48	48	48	480
16. Instructional Materials	4	24	48	48	48	48	48	48	48	48	48	468
17. Mass Media	2	12	24	24	24	24	24	24	24	24	24	228
18. Curriculum and Supervision	2	24	24	24	24	24	24	24	24	24	24	240
19. Field Coordination	1	12	12	12	12	12	12	12	12	12	12	120
20. Administration	1	12	12	12	12	12	12	12	12	12	12	120
Supporting Teams												
21. Printing and Production	2	12	24	24	24	24	24	24	24	24	24	228
22. Editors and Translators	4	12	48	48	48	48	48	48	48	48	48	444
23. Secretaries and Typists **	12	60	144	144	144	144	144	144	144	144	144	1368
24. Drivers	4	24	48	48	48	48	48	48	48	48	48	468
Leaders and Consultants												
On part-time basis as required		-	-	-	-	-	-	-	-	-	-	-
Total Man-Months	Total Personnel = 90	444	1080	1080	1080	1080	1080	1080	1080	1080	1080	10,164 Man-Months
												OR 847 Man-Years

* No provision made during these years for reduction of local staff because of difficulty in predicting rate of writing and book production, and whether or not new assignments such as research, post-graduate teaching, etc. will replace textbook writing as the major assignment.

** Part-time secretaries will be hired as needed.

CHART 18

ESTIMATED RTG BAHT BUDGET
(In thousands - 000s)

Thai Fiscal Year (Oct. 1 to Sept. 30)	Personnel		Commodities	Housing	International Travel for Participants	Other Costs	Baht Totals
	Professional (1)	Supporting (2)	(3)	(4)	(5)	(6)	
FY-73	-	-	-	-	-	200 (7)	200
FY-74	672	154.4	300	624	84	400	2,234.4
FY-75	1,632	388.8	300	1,572	84	400	4,376.8
FY-76	1,632	388.8	300	1,572	84	400	4,376.8
FY-77	1,632	388.8	300	1,572	196	400	4,488.8
FY-78	1,632	388.8	300	1,572	252	400	4,544.8
FY-79	1,632	388.8	300	1,572	252	400	4,544.8
FY-80	1,632	388.8	300	1,572	280	400	4,572.8
FY-81	1,632	388.8	300	1,356	224	400	4,300.8
FY-82	1,632	388.8	300	1,356	112	400	4,188.8
FY-83	1,632	388.8	300	996	-	400	3,716.8
TOTALS ฿	15,360	3,653.6	3,000	13,764	1,568	4,200	41,545.6
TOTALS $*	768	182.68	150	688.2	78.4	210	$2,077.28

(1) Costs for Thai professional personnel computed at Baht 24,000 per year per specialist (computed at the Master's Degree level).
(2) Costs for Thai supporting staff (production personnel, editors, secretaries, typists, and translators) computed at Baht 20,000 per year per person; drivers at Baht 7,200 per year per person.
(3) Costs for commodities which include all printing costs and supplies.
(4) Costs for house rental computed at Baht 36,000 per year per external specialist; Baht 12,000 per year per local staff.
(5) Costs for round-trip international travel for participants and counterparts computed at Baht 28,000 per person.
(6) Costs include internal travel, automobile maintenance, language study for participants, building operations, utilities, contribution to an annual NEDC conference, etc. It does not include construction costs for three sub-centers.
(7) Costs required for international travel to sharpen and launch project. (See "Planning Phase I" under Heading "C" on pages 203 - 205.)

*Rate of exchange calculated at Baht 20.00 to US$ 1.00.

p. 214 blank

CHART 19

EXTERNAL PERSONNEL: STAFFING REQUIREMENTS

Area of Specialization	No. of Specialists	Man-Months per Fiscal Year										Total Man-Months
		74	75	76	77	78	79	80	81	82	83	
Writing Teams												
1. Language Arts (Thai)	1	12	12	12	12	12	12	12	12	12	12	120
2. Language Arts (Thai)	1	–	12	12	12	12	12	12	12	12	–	96
3. Language Arts (English)	1	–	12	12	12	12	12	12	12	12	–	96
4. Social Studies	1	–	12	12	12	12	12	12	12	12	–	96
5. Mathematics	1	–	12	12	12	12	12	12	12	12	–	96
6. Science	1	–	12	12	12	12	12	12	12	12	–	96
7. Health and Physical Education	1	–	12	12	12	12	12	12	–	–	–	72
8. Arts and Crafts	1	–	12	12	12	12	12	12	–	–	–	72
9. Music	1	–	12	12	12	12	12	12	–	–	–	72
10. Practical Arts, Boys	1	–	12	12	12	12	12	12	–	–	–	72
11. Domestic Arts, Girls	1	–	12	12	12	12	12	12	–	–	–	72
12. Kindergarten and Pre-School	1	–	12	12	12	12	12	12	–	–	–	72
13. Non-Formal and Adult Education	1	12	12	12	12	12	12	12	12	12	12	120
14. Teacher Education	1	12	12	12	12	12	12	12	12	12	12	120
Service Teams												
15. Research, Testing, and Evaluation	1	12	12	12	12	12	12	12	12	12	–	108
16. Instructional Materials	1	12	12	12	12	12	12	12	12	12	–	108
17. Mass Media	1	–	12	12	12	12	12	12	12	12	–	96
18. Curriculum and Supervision	1	12	12	12	12	12	12	12	12	12	–	108
19. Field Coordination	1	12	12	12	12	12	12	12	12	12	12	120
20. Administration	1	12	12	12	12	12	12	12	12	12	12	120
Supporting Teams												
21. Printing and Production	1	–	12	12	12	12	12	12	12	12	–	96
* Short-term Consultants (For specialized areas, see Chart 14.)	12	6	6	6	3	3	3	3	3	3	–	36
Total Man-Months	Total Personnel = 33	102	258	258	256	256	256	256	183	183	60	2064 Man-Months
												OR 172 Man-Years

*Periods of assignment will average three (3) months each.

p 216 blank

CHART 20

PARTICIPANT TRAINING REQUIREMENTS

Program Duration:

1. All participants seeking a doctor's degree are programmed for twenty-four (24) months, with the possibility of a six (6) to twelve (12) months' extension.
2. All participants serving as members of 'Short-term Consultant-Thai Counterpart' teams are programmed for three (3) months.
3. All participants seeking short-term skill experiences in specialized areas such as publications, graphic arts, illustration, etc. are programmed for six (6) months.

Program Phasing:

1. None of the writing or service team specialists is scheduled for training abroad during the first three years in order to give each specialist an opportunity to contribute to the project and a reasonable amount of time to select and develop a doctoral research topic.
2. The years assigned for training abroad are tentative; they need to be adjusted later on the basis of project and individual needs and priorities.
3. Where cases develop in which two qualified candidates are available in one field, and none in another, appropriate changes in participant allocations from one specialized field to another should be allowed.

Area of Specialization	No. of Participants	Man-Months per Fiscal Year										Total Man-Months
		74	75	76	77	78	79	80	81	82	83	
Writing Teams												
1. Language Arts (Thai)	1	-	-	-	12	12	-	-	-	-	-	24
2. Language Arts (Thai)	1	-	-	-	-	-	-	-	12	12	-	24
3. Language Arts (English)	1	-	-	-	-	-	-	-	12	12	-	24
4. Social Studies	1	-	-	-	-	-	12	12	-	-	-	24
5. Mathematics	1	-	-	-	-	-	-	12	12	-	-	24
6. Science	1	-	-	-	-	12	12	-	-	-	-	24
7. Health and Physical Education	1	-	-	-	-	12	12	-	-	-	-	24
8. Arts and Crafts	1	-	-	-	-	-	12	12	-	-	-	24
9. Music	1	-	-	-	-	-	-	12	12	-	-	24
10. Practical Arts, Boys	1	-	-	-	-	-	-	-	12	12	-	24
11. Domestic Arts, Girls	1	-	-	-	-	-	-	12	12	-	-	24
12. Kindergarten and Pre-School	1	-	-	-	12	12	-	-	-	-	-	24
13. Non-formal and Adult Education	1	-	-	-	12	12	-	-	-	-	-	24
14. Teacher Education	1	-	-	-	-	-	12	12	-	-	-	24
Service Teams												
15. Research, Testing, and Evaluation	1	-	-	-	-	12	12	-	-	-	-	24
16. Instructional Materials	1	-	-	-	-	-	12	12	-	-	-	24
17. Mass Media	1	-	-	-	12	12	-	-	-	-	-	24
18. Curriculum and Supervision	1	-	-	-	-	-	12	12	-	-	-	24
19. Field Coordination	1	-	-	-	12	12	-	-	-	-	-	24
20. Administration	1	-	-	-	-	-	-	12	12	-	-	24
* **Supporting Teams**												
21. Publication, production, illustration, graphic arts, etc.	4	6	6	6	6	-	-	-	-	-	-	24
** **Short-term Counterparts**												
22. In selected areas (See Chart 14.)	12	6	6	6	3	3	3	3	3	3	-	36
Total Man-Months	Total Participants = 36	12	12	12	69	99	99	111	87	39	-	540 Man-Months
												OR 45 Man-Years

* Participant programs will average six (6) months in length.

** Counterpart programs will average three (3) months in length.

-1 218. Blank

CHART 21

EXTERNAL ASSISTANCE BUDGET (IN U.S. $000's)

Fiscal Year		Personnel Services			Participant Training		Contract Commodities	Other Costs	Totals
		Long-Term	Short-Term	Agency Backstop	Doctoral Program	Short-Term			
FY-73								10(1)	10
FY-74		336(2)	30(3)			14.4(4)	20(5) 40(6)		440.4
FY-75		882	30			14.4	53	10(7)	989.4
FY-76		882	30			14.4	53	10	989.4
FY-77		882	15		48(8)	10.8	50	7	1,012.8
FY-78		882	15		72	3.6	51	7	1,030.6
FY-79		871.5	15		64	3.6	52	3	1,009.1
FY-80		871.5	15		64	3.6	52	3	1,009.1
FY-81		630	15		48	3.6	46		742.6
FY-82		630	15		16	3.6	46		710.6
FY-83		210					35		245
TOTALS	$	7,077	180		312	72.0	498	50	8,189.0
	฿*	141,540	3,600		6,240	1,440	9,960	1,000	163,780

(1) Costs required for international travel to sharpen and launch project. (See "planning Phase I" under Heading "C".)

(2) Costs for long-term contract specialists computed at $42,000 per year.

(3) Costs for short-term consultants computed at $5,000 per month.

(4) Costs for short-term participants computed at $1,200 per month.

(5) Costs for four (4) vehicles for contract team official use at $5,000 each.

(6) Costs for membership in relevant professional organizations (including all their publications) and for instructional materials for specialists in their research, writing, teaching, and demonstrating. Materials include reference books and supplies, experimental materials, slides, films, transparencies, audio and video tapes, etc. $1,000 allocated for each long-term specialist per year; $1,000 for each short-term consultant-Thai counterpart team; and $30,000 annually for total project use to be administered centrally through the Instructional Materials Center.

(7) Costs to cover partially an annual nation-wide conference, or a series of regional seminars, to be held at the pilot site, to disseminate research findings and program developments related to NEDC activities.

(8) Costs for long-term (doctoral) participants computed at $8,000 per year.

*Rate of exchange computed at U.S.$1.00 to 20 baht.

p. 220 blank

CHART 22

PROJECT FUNDING SUMMARY (1973-1984)
(In U.S. $000's)

Description of Cost Item	Cost	RTG Input	Assistance Request	Comments
Personnel, Thai (1)				
Personnel, Contract (1)				
Participants (2)				
Commodities (3)				
Housing and Office Facilities (4)				
Conferences (5)				
Others (6)				
Contingency (7)				
Total Costs				

(1) Includes all personnel: specialists, service and support staff, full-time and part-time.
(2) Includes all participants: long-term doctoral candidates and short-term personnel.
(3) Includes all commodities: vehicles, office equipment and supplies, and instructional materials as prescribed.
(4) Includes all housing for Thai and contract project staff; also office space and working areas.
(5) Includes total costs for one annual conference at the NEDC, or a series of seminars.
(6) Includes costs for international travel to refine project, costs related to work of school building design consultants conducting feasibility studies, local transportation, vehicle maintenance, and utilities and building operational expenses.
(7) Includes estimates for capital costs (land, site development, architectural fees, construction, and fixed and movable equipment) for construction of the CDTC and IMPC (which can probably be combined in a single unit) and the IEC.

A 222 blank

Section VIII

OUTPUTS AND SPIN-OFF

This section lists the outputs and possible spin-off gains which the project is expected to produce during the course of its operation, or by the time of its termination. The format of presentation is similar in subject and sequence to that of Section III which dealt with project objectives. Outputs, wherever possible, are quantified; anticipated dates, sometimes utilizing general terms, are provided.

A. Outputs: Description, Magnitude, and Completion Date

1. Curriculum and Instructional Materials

Description of Output	Completion Date
(a) Elementary School (Prathom 1-7) Textbooks and Materials Production of relevant up-to-date student books, teachers' guides, related tests, and instructional materials, based on the most modern and reliable curriculum concepts and practices, for Prathom 1 through 7, and	General dates: Work and production begin on July 1, 1975 and end on June 30, 1984. Processes of evaluation and revision, however, continues beyond project termination.

(continued)

pp 224-226 blank

Description of Output	Completion Date
covering all elementary school subject areas listed in Chart 6. The subjects and grade levels are:	
Language Arts (Thai): P-1, P-2, P-3, P-4, P-5, P-6, P-7.	Specific dates:
Language Arts (English): P-1, P-2, P-3, P-4, P-5, P-6, P-7.	P-1 completion date: June 30, 1976; P-2, P-3, P-4, etc. completion dates, each one successive year later with P-7 completion date on June 30, 1982.
Social Studies: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	
Mathematics: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	
Science: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	
Health and Physical Education: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	P-1 completion date: February 28, 1976; P-2, P-3, P-4, etc. completion dates, each eight successive months later with P-7 completion date on February 28, 1980.
Arts and Crafts: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	
Music and Drama: P-1, P-2, P-3, P-4, P-5, P-6, P-7.	
Practical Arts, Boys: P-4, P-5, P-6, P-7.	P-4 completion date: February 28, 1976;

(continued)

Description of Output	Completion Date
Domestic Arts, Girls: P-4, P-5, P-6, P-7.	P-5, P-6, and P-7 completion dates at successive eight-month intervals with P-7 completion date on February 28, 1978.
(b) Kindergarten and Preschool Education Books and Materials Production of relevant, low-cost verbal and non-verbal materials dealing with children's study, play, and socialization. Materials will be based on the latest research and practice in the field of child growth and development; they will be pitched to rural children, ages 3 to 6. Easy-to-understand guides and suggested activity booklets will also be produced for parents, teachers, and personnel serving as caretakers of young children. Materials will be designed for use in formal settings, such as a Kindergarten class, or	General dates: Production, starting with Kindergarten children, should begin on July 1, 1975. It should then extend downwards, covering children of ages 5, 4, and 3 respectively, ending on June 30, 1981. Curriculum and materials development, evaluation and revision, however, continue on a perpetual basis.

(continued)

Description of Output	Completion Date
in highly unstructured situations such as homes, day-care centers, or play areas. (c) Teacher Education Books and Materials Production of modern teacher education materials, for both preservice and in-service training, extending from the certificate through the doctoral level and for use in the three teacher training institutions in the pilot area. The materials will supplement the teachers' guides that will be made available to all elementary school teachers utilizing the newly developed books. Materials may consist of new and revised textbooks, problem-solving exercises, case studies, programmed texts, correspondence courses, audio-visual media such as video tape lessons and demonstrations, micro-teaching materials, etc.	General dates: Production begins on July 1, 1975 and ends on June 30, 1984. It commences at the certificate level and moves upwards to the postgraduate level. Certain aspects of production must be closely dovetailed with the production of materials for Prathom 1-7, Kindergarten and Preschool Education, and Nonformal and Adult Education. Curriculum development, evaluation, and revision continue beyond termination of project.

(continued)

Description of Output	Completion Date
(d) Service Team Assistance, Books, and Materials The six (6) service teams, in addition to providing continuous assistance for each writing team at the Elementary School, Kindergarten and Preschool, Non-formal and Adult Education, and Teacher Education levels, will produce materials and services related to their own particular fields of specialization. The Research and Testing Team, for example, will develop units of work in research concepts and methodology for use by all teacher trainees at all levels of teacher training; the curriculum and supervision team will produce materials and methods to improve current practices in curriculum development and teacher supervision.	General dates: Work and production begin on July 1, 1974 and continue to termination of project and beyond.

(continued)

Magnitude of Outputs (a) to (d)

Test version or edition: Adequate materials and written copies of productions for all students, teachers, adults, teacher trainers, and other project participants in pilot schools or groups.

Final revised edition: Adequate copies of relevant written publications and other instructional materials for all students, teachers, adults, teacher trainers, and other project participants in Regions 9 and 10.

Description and Magnitude of Output	Completion Date
(e) Kindergarten and Preschool Education Special Reports Development of a comprehensive report in two parts by the Kindergarten and Preschool Education Writing Team of the FOU for study and possible action by the CCC. The report will discuss the current status of learning activities for rural children, ages 3 to 6, and present suggestions and recommendations concerning activities, materials, and	Specific dates: First report due on June 30, 1976; second report on June 30, 1977.

(continued)

Description and Magnitude of Output	Completion Date
programs that can make these early childhood years more productive.	
(f) Curriculum Development and Textbook Center Creation of a model regional Curriculum Development and Textbook Center (CDTC) for the rural sector to review and modernize on a continuing basis the elementary curriculum, and to implement such modernization through continuous revision and production of a comprehensive series of student books and teachers' guides. The Center will also concern itself strongly with rural teacher education and increasingly, as it grows and matures, with early childhood, nonformal and adult education.	General dates: Center opens on July 1, 1974 in temporary quarters. New and permanent facilities should be completed by the early part of 1977.
(g) Instructional Materials and Production Center Creation of a model regional	General dates: Center opens on July 1, 1974 in temporary

(continued)

Description and Magnitude of Output	Completion Date
Instructional Materials Center (IMC) on a continuing basis to study, select, test, evaluate, design, and produce a wide variety of locally-made and modern technological media and materials that are reasonable in cost and relevant to the experiences of teachers and learners at all educational levels in the rural sector. Many of the materials produced will have been developed by the CDTC or recommended by the Inservice Education Center (IEC).	quarters. New and permanent facilities should be completed by the early part of 1977.
(h) Specialized Indigenous Staff Development of an efficient and competent indigenous capability for continuous curriculum, textbook, and instructional materials reform and improvement through the (1) training of a cadre (minimum of 110) of local curriculum and media specialists,	General dates: Local staff training begins on a small scale on September 1, 1973; it grows considerably in 1974, and hits its peak in 1975. It maintains this peak level throughout the life of the project.

(continued)

Description and Magnitude of Output	Completion Date
textbook writers, illustrators, and translators; and (2) establishment of an organizational and procedural approach dealing with all skills, techniques, and functions of curriculum and textbook development starting with research and content selection and ending with field implementation and evaluation.	
(i) Test Development and Special Report Production and distribution of both diagnostic and evaluative test instruments correlated to the new textbooks and teachers' guides for each subject area. Also, production of materials to assist teachers in constructing more valid and reliable classroom tests. Finally, the preparation of a special report for consideration and action by the CCC dealing with external test reform necessitated by the revised elementary school	General dates: Work and production begin on July 1, 1975 and continue to termination of project and beyond. Specific date: Special test report is due on June 30, 1976.

(continued)

Description and Magnitude of Output	Completion Date
curriculum and problems linked to current screening procedures for students desiring to continue their education beyond Prathom 4 and 7	

2. Teacher Education: Preservice and Inservice

Description and Magnitude of Output	Completion Date
(a) Inservice Education: Upgrading Current Teachers Upgrading of all elementary teachers currently working in elementary schools in Regions 9 and 10 through inservice programs focusing on the new and revised curriculum, student textbooks, instructional materials, tests, and especially, the teachers' guides.	General dates: Inservice program must be closely dovetailed with the field testing and production of all curricular materials, beginning about January 1, 1976 and continuing to termination of project and beyond.
(b) Modernization of the Teacher Training Curriculum at the Preservice Level	General dates: Work and development

(continued)

Description and Magnitude of Output	Completion Date
Modernization and revision of the total preservice curricular programs (including content, methodology, materials, supervision, etc.) at the three participating teacher training institutions at the Lower Certificate, Higher Certificate, and Bachelor's Degree level. Modernization scheme based on (1) new concepts, books, and materials produced by the CDTC and IMC: (2) additional materials developed by the Teacher Education Writing Team and individual Service Teams; and (3) action programs resulting from a study, review, and evaluation of the current curricular programs of study at the three local teacher training institutions.	begin on July 1, 1975 and continue to termination of project and beyond.
(c) <u>Post-Graduate Programs in Teacher Education for the Rural Sector</u> Design and development of teacher	<u>General dates:</u> Study and program development begin

(continued)

Description and Magnitude of Output	Completion Date
education programs with a distinct rural bias at the Master's and Doctor's degree level at the participating university and possibly the college of education. This achievement will be facilitated and enhanced by (1) the direct participation of faculty representatives from these institutions in selected phases of the pilot project over a period of up to ten years, and (2) by the eventual return of twenty (20) participants who had worked closely with the project, conducted their research in the immediate geographic area, and completed their doctorates overseas in a broad spectrum of academic disciplines.	on July 1, 1975 and continue to termination of project and beyond.
(d) <u>Upgrading of Teacher Trainers</u> Improvement of conceptual understandings, knowledge, and skills of teacher trainers and trainers of teacher trainers	<u>General dates:</u> Inservice programs begin on July 1, 1975 and continue to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
(over 300) at the three designated teacher training institutions.	
(e) Inservice Education Center Establishment of a model regional Inservice Education Center (IEC) on a perpetual basis to provide continuous professional growth experiences through periodic re-cycling of all teachers, teacher trainers, trainers of teacher trainers, supervisors, educational specialists, and administrators who live and work in the geographic area.	General dates: Center opens on July 1, 1975 in temporary quarters. New and permanent facilities should be completed by the early part of 1977.
(f) Skills Development in Utilization of Materials of Instruction Acquisition by preservice and in-service teachers and teacher trainers of new skills and deeper insights relative to more effective selection and use of new and revised instructional materials and modern media which were discussed in the prior output	General dates: Program begins on July 1, 1975 and continues to termination of the project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
section (e.g., the use of varied visuals in large group instruction; the use of video-tape in training teachers and supervisors; the use of audio-tape in language training, etc.).	
(g) Terms of Service for the Rural Teacher Promotion in the region of teacher morale, job tenure, and professional productivity by (1) their direct involvement in various facets of the pilot project; (2) a thorough study of factors related to terms of service such as salaries, promotions, school and geographic assignments, incentives to compensate for hardship or security-related postings, etc.; and (3) the submission of a special report(s) of this study, along with appropriate recommendations, to the CCC for its reactions and possible implementation.	General dates: Terms of service for rural teachers should be studied throughout the life of the project and beyond. Specific date: First report to CCC due on December 31, 1976.

(continued)

3. Leadership and Supervision

Description and Magnitude of Output	Completion Date
(a) Pilot Area Leadership Improvement Upgrading of leadership skills and approaches of educational and community administrators, organization heads, and supervisors (a minimum of thirty), working in the pilot area, through internship and field experiences directly related to the project.	General dates: Leadership experiences begin on September 1, 1973 and extend to termination of project and beyond.
(b) Intensive Administrative Training for Field Operations Unit (FOU) Advanced administrative training for a cadre of selected Thai educational community leaders (a minimum of ten), representing the three participating teacher training institutions, the three NDEA sub-centers, and Changwat and community agencies and offices, to (1) serve as a coordinating inter-agency team for regional educational planning and development,	General dates: Leadership experiences begin on September 1, 1973 and extend to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
and (2) provide dynamic leadership, with a balanced national-regional point of view, to the specific institutions which they lead.	
(c) Programs in Educational Administration Development of academic courses, seminars, internships, etc., utilizing Thai-related curricula, materials and methods, in the fields of educational administration, curriculum and supervision, guidance and counseling, adult education, and community planning and programs. Courses and seminars, which will be prepared for non-degree, B.A., M.A., and Ph.D. levels, will be useful in promoting the professional growth of present and prospective educational and community leaders and supervisors in the rural area.	General dates: Program development begins on July 1, 1975 and continues to termination of project and beyond.
(d) Role of the Supervisor	General dates:

(continued)

Description and Magnitude of Output	Completion Date
Assessment of the current role of the embattled rural supervisor at both the practice teaching and inservice levels; experimentation with new and more effective procedures; and a special report to the CCC describing the existing situation and suggesting roads to improvement.	Assessment and experimentation begin on July 1, 1975 and extend to termination of project and beyond. Specific date: Report to CCC due on December 31, 1976.
(e) Specialized Skills for Short-term Counterparts In-depth experiences abroad and at home in highly specialized educational areas (See Chart 14.) for twenty-four (24) short-term Thai counterparts. The experiences include exposure to the latest concepts, materials, programs, and specialists in selected fields that possess promising potential for accelerating the pace of progress in Thai education by capitalizing on practical research and innovation from other nations.	General dates: Counterpart program begins on April 1, 1973 and continues to termination of the project.

(continued)

Description and Magnitude of Output	Completion Date
(f) Ministry-Field Coordination Development of more effective organizational and administrative structures, institutional relationships, procedures for policy formulation and implementation, and communication systems between Ministry offices and field agencies, and, more specifically, between the CCC and FOU.	General dates: Coordination efforts related to the project begin on September 1, 1973 and continue to termination of project and beyond.

4. Adult and Nonformal Education

Description and Magnitude of Output	Completion Date
(a) Nonformal and Adult Education Books and Materials Production of new and revised curricular materials which have high economic and social motivational value for adults living in	General dates: Production begins on July 1, 1975 and continues to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
the rural sector, and which, at the same time, promote improved literacy. Age groups should begin at about 14 and extend throughout adulthood. Literary materials should be of a high-interest, low-readability nature, dealing with topics such as health problems, population education, the expansion of crop production, increasing rural income, and reading for pleasure. Materials will include soft-cover booklets, newspapers, correspondence courses, charts and posters, and radio and television presentations. Books, materials, and learning activity guides produced for out-of-school youth and adults should be carefully articulated with materials produced for in-school youth in subject areas that are relevant. Writing teams in Health and Physical Education,	

(continued)

Description and Magnitude of Output	Completion Date
Arts and Crafts, Music and Drama, Practical Arts (Boys), and Domestic Arts (Girls) should devote considerable attention to out-of-school youth and adult programs and materials after completing the elementary level materials.	
(b) Preservice and Inservice Teacher Training in Nonformal and Adult Education Introduction of new and revised curricular concepts, content methods, materials, attitudes, and emphasis in nonformal and adult education at the preservice level in the three participating teacher training institutions with emphasis on efficient use of the materials described above; at the inservice level, upgrading of adult education teachers in the geographic area, again with particular focus on the newly developed curricular	General dates: Teacher training program begins on July 1, 1975 and continues to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
materials.	
(c) Special Nonformal and Adult Education Study and Report Conduct of a field study of the needs and problems of out-of-school rural youth and adults to determine how the formal elementary school curriculum can be modified to address at an early age these needs and problems; also, how formal, nonformal, and adult education programs can be more effectively coordinated into a practical life-long educational continuum. A report of the study, including specific recommendations, will be submitted to the CCC for its review and possible action.	Specific date: Report to CCC due on December 31, 1976.

5. Physical Facilities and Equipment

(continued)

Description and Magnitude of Output	Completion Date
(a) Leadership Development in School Building Planning and Design Production of a capable indigenous staff in school building planning by promoting among the educational administrators and leaders of the region (1) a deeper awareness of the importance of educational facilities design with respect to the quality of teaching and learning, and (2) skill development related to the writing of educational specifications, space conceptualization, design, construction, utilization, and management. Promotion activities include workshops, seminars, and formal courses; for a limited number of educators, opportunities will be provided for working directly with architects in planning and designing building facilities for the NEDC three sub-centers.	General dates: Educational facilities planning for the three sub-centers begins September 1, 1973 and continues until the early part of 1977. Seminars, workshops, and formal courses continue to the termination of the project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
(b) Design and Construction of Three Model Centers Design, construction, and educational programming for the CDTC, IMC, and the IEC as three model NEDC regional centers which are carefully and comprehensively planned to be operationally functional, economically realistic, and culturally aesthetic.	General dates: Planning and design begin September 1, 1973 and continue during construction, with emphasis moving from physical facilities to educational programming and staffing, until the early part of 1977.
(c) Special Educational Facilities and Equipment Reports Compilation of an educational facilities report covering the regional geographic area and providing information and recommendations to supplement the feasibility study of the three NEDC sub-centers and to be presented to the CCC for study and possible action. Additional report(s) covering design and construction of staff housing, rural elementary schools, and educational equipment, both fixed and movable,	Specific dates: First report to CCC due on June 30, 1974 following completion of feasibility study by Thai specialist-external consultant team. Target dates for subsequent reports at discretion of CCC.

(continued)

Description and Magnitude of Output	Completion Date
will also be submitted to the CCC.	

6. Innovation and Research

Description and Magnitude of Output	Completion Date
(a) Research Units for Teacher Training Design and construction of practical training units in educational research which will include materials for both teacher trainees and teacher trainers and which will be part of the regular preservice curriculum. The units, which will require about two weeks to complete, will focus on the relationship of theory and concepts to field conditions and problems, and will emphasize action and applied research techniques in a rural environment.	Specific dates: Work begins on July 1, 1975 and concludes by December 31, 1976. Research units, however, will require periodic revision.

(continued)

Description and Magnitude of Output	Completion Date
(b) Staff Training in Research and Innovation Development of a competent indigenous staff (minimum of 110) who through years of direct on-the-job experience, will have acquired research concepts and skills which they can apply innovatively to a wide range of practical educational tasks and problems including textbook production, curriculum improvement, materials, design and production, teacher education, leadership training, etc.	General dates: Staff development begins on July 1, 1974 and continues to termination of project and beyond.
(c) Shortcutting the Process of Innovation Acceleration of the innovative process in education through the introduction into Thailand, via other nations, the most promising innovative techniques, skills, materials, and programs -- with appropriate local	General dates: Process begins on September 1, 1973 and continues to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
adaptation -- in carefully selected specialized areas. (See Chart 14.)	
(d) Utilization of Mass Media Improvement of communications and utilitarian learning activities for the widely dispersed population of the rural area through more innovative use of the press, radio, and television.	General dates: Program begins on July 1, 1974 and continues and expand, to termination of project and beyond.
(e) Professional Library Development of an up-to-date and diversified multi-media library of research papers and experimental program reports; professional references; periodic publications from a variety of educational institutions and organizations; charts, maps, slides, film strips, and transparencies; tests of varied descriptions; reading accelerators and science kits; and a world-wide sampling of	General dates: Library development begins on September 1, 1973 and continues to termination of project and beyond.

(continued)

Description and Magnitude of Output	Completion Date
textbooks, workbooks, and descriptive pamphlets. Such materials serve as source documents and prototype materials for the writing teams, course and materials designers, teachers, and educational planners and researchers.	
(f) Research and Innovation Diffusion Dissemination of research findings and innovative program developments to educators and interested individuals and institutions throughout the nation, and possibly from other nations, at periodic intervals through (1) an annual conference or a series of seminars, (2) written publications, (3) reports on selected specialized topics, and (4) personal visits to the NEDC itself.	General dates: Dissemination begins on July 1, 1975 and continues to termination of program and beyond.
(g) Regional Center for Rural Research and Development	General dates:

(continued)

Description and Magnitude of Output	Completion Date
Establishment of the NEDC as a permanent regional center for rural research and development, complete with trained staff, competent leadership, required library, building facilities, and a supporting budget, to ensure that current and future educational needs and problems of the area will be analyzed and addressed in a systematic and scientific manner.	Program begins on July 1, 1974 and continues to termination of project and beyond.

B. Possible Spin-off

Innovative pilot projects, especially if they are broad in scope, extended in time, and manned by imaginative personnel, are almost inevitably destined to produce a wide range of discoveries and achievements -- spin-off -- beyond those explicitly called for in the original objectives. To predict such spin-off gains is difficult, and in some cases impossible. But no new project can afford not to take them into consideration since (1) they are sometimes even more significant than pre-determined goals, and (2) they highlight the need for continuous

program evaluation and contractual flexibility. Below, listed in brief, generalized statements, are spin-off possibilities that could emanate from the multi-dimensional project described in this volume.

1. Heightened awareness, regionally and/or nationally, of the importance of education in the rural sector, and consequently increased commitment;

2. A greater respect for the complexity and time-consuming nature of curriculum change, and also for its vital significance;

3. Empirical data that reveal a positive correlation, over a period of time, between years of relevant education and the level of rural income;

4. Alternative plans or strategies, consistent with national financial realities, for extending elementary education beyond Prathom 4;[1]

5. More functional classroom design that calls for enlarged floor space in building additions to current rural elementary schools or in constructing new ones;

6. New and more effective relationships between formal and nonformal education, and between education and other sectors;

(1) For examples of alternatives, See Nicholas Bennett, et al, Problems of Financing the Thai Educational System during the 1960's and 1970's, Educational Planning Division, Ministry of Education, Bangkok, pp. 81-94.

7. Closer and better coordinated relationships among educational institutions representing the teachers colleges, the college of education, and a rural university;

8. A more widespread positive attitude by both the educated and uneducated toward positive experimentation, innovation, and research;

9. A higher satisfaction by people living in the Northeast with rural institutions and rural life;

10. Increased efficiency in centralized-decentralized approaches to school system operations;

11. A fuller understanding and appreciation on the part of all educators of the significance of education for pre-school and kindergarten children on the one side and out-of-school youth and adults on the other;

12. Improved ways of utilizing external specialists and innovations from other nations in Thailand's best interests;

13. A higher priority for the importance of functional school design;

14. More creative approaches to the administration and financing of rural schools;

15. A re-ordering of priorities within the total educational budget with particular focus on a considerably higher priority for educational quality;

16. A turn-around in Thai post-graduate education by attaching less importance to long-term, degree-level participant training in placing increased emphasis on (a) short-term participant training in specialized skill areas needed by the nation, and (2) the use of carefully selected external specialists for limited periods of service directly here in Thailand with participant training and higher degree granting taking place here;

17. A greater appreciation of the thesis that complex and intractable problems cannot be conquered by simple, piecemeal, short-time, and low-cost schemes; small and scattered initiatives invariably are only marginally productive at best;

18. The realization that without a deep feeling of urgency concerning the current status of education in the nation there can be only little real change; also the realization that matters of urgency, to be dealt with effectively, must be identified early since education is a long-term process that does not generally yield to crash programs; and

19. A deeper insight into the fact that just as totalitarian regimes utilize education as their major instrument to foster their ideologies, so too must democratic countries call on education to promote among their people the values and institutions they cherish. Problem areas ranging from narcotics control to family planning are directly hinged to the role and impact of education.

Section IX

PROJECT EVALUATION

Analytic, objective, and continuous evaluation is one of the best guarantees that money, personnel, and other resources are being spent wisely and for intended purposes. Such evaluation in the project just presented can be helpful in keeping all efforts goal-oriented, in discovering and diagnosing critical problem areas, in determining appropriate remedial measures, and in establishing a system-wide climate wherein every person assigned to the project team openly examines his own performance as an individual and as a member of a special task group.

A. The Complexities of Evaluation

But evaluation is seldom easy, and this is especially true in relation to the project presented here. The reasons are several:

1. Multi-dimensionalism

Numerous program dimensions and activities, all interrelated and part of a total system, and all operating simultaneously, make it impossible to extract any single facet and judge its effectiveness validly in isolation to the full play and effect of total field forces.

2. Job Role and Objective vs. Subjective Assessment

The teaching act -- that is, what the teacher does while teaching

pp 258-260 blank

-- has been described as being two-fold: technical and artistic. The effective teacher must be a technician; he must know his subject and how to present it; and this calls for knowledge and skills that are observable and largely measurable. But he must also be an artist; he must know how to stimulate, motivate, stir, sell, disturb, humor, and cajole. And he must know something about human motivation, teacher-learner rapport, and hopefully a little about a word called charisma. This latter grouping calls for artistry, and artistry is illusive. It is colored by values, perception, and personal taste. There are fewer tangibles to see and touch, and the few that do exist do not readily lend themselves to neat, objective measurement. Subjective assessments are surely needed; yet, instruments to handle such measurement are still -- in this modern age -- rough and obtuse. However, the fact that qualities of artistry are more difficult to quantify and evaluate does not in any way make them less important or less valid. Actually, in so many cases, the very reverse is true.

3. Cognitive, Affective, and Psychomotor Learning

All learning is generally categorized under these three headings. To measure cognitive learning, dealing with the acquisition of knowledge and things intellectual, surely will require an evaluative instrument quite different from one attempting to measure affective learning, concerned with feelings and attitudes, or with psychomotor learning which focuses

on mind-body coordination. The point, even though hurriedly presented, should be clear: paper-pencil tests and examinations represent only one evaluative approach, and that one applied mainly to the area of cognitive learning. The measurement of affective learning is especially complex; it is also extremely time consuming since valid results, dealing largely with covert behavior, are dependent to a considerable extent on individualized testing by trained specialists. The measurement of psychomotor as contrasted with affective learning deals largely with observable and more easily measurable behavior. It takes on many forms: finger dexterity tests essential for typing or small-part hand assembly; eye-mind-hand-foot coordination exercises required for skillful driving or flying; or power, endurance, and mind-body coordination tests to appraise physical fitness and agility.

4. Time Lag

Meaningful knowledge, like good seeds, requires a period of germination. Stately teaks are not the creation of days or months, but years -- many years. So, too, education requires time -- time for introspection, for assimilation, for self-inquiry, for self-discovery. So, evaluation cannot be a uni-temporal effort, frozen in the present. Rather, it must be longitudinal, extending over a considerable period of years, taking account of the time lag between childhood learning exercises in the classroom and adult activities in the neighborhood

village in which those early childhood experiences come alive and become meaningful.

Other considerations which will make objective, definitive evaluation of the project difficult might be cited. But it should already be strongly evident that the evaluation of a sectoral, multi-dimensional project with an extended time-span will call for the following: continuous evaluation throughout the life of the project and beyond, utilization of a variety of assessment instruments, and involvement of all key personnel participating in the project in a variety of evaluative roles.

B. Evaluation of Project at Source

The project evaluation task is divided into two broad time phases: (1) Criteria for assessing the project before adoption; and (2) approaches for evaluating the project during the period of operation. The chart on the following page (See Chart 23.) presents RTG evaluative criteria, both specific and generalized, with its own ratings of how adequately the total project meets the nation's high priority educational objectives.

CHART 23

RTG SOURCE CRITERIA: SELF-EVALUATION OF PROJECT PROPOSAL BEFORE ADOPTION

Criterion Number	Criterion Description	Extent to which Project meets Criterion: Slightly	Moderately	Considerably
1.	Contributes to socio-economic development of nation (short-run)		X	
2.	" " " " (long-run)			X
3.	Emphasizes elementary education enrollment expansion	X		
4.	Emphasizes elementary education qualitative improvement			X
5.	Emphasizes teacher education enrollment expansion	X		
6.	Emphasizes teacher education qualitative improvement			X
7.	Stresses remedial measures to reduce wastage and failure rates at elementary level			X
8.	Stresses curriculum improvement at elementary, teacher education, and nonformal and adult education levels			X
9.	Focuses on the improvement of textbooks, instructional materials, and mass media			X
	(continued)			

Criterion Number	Criterion Description	Extent to which Project meets Criterion: Slightly	Moderately	Considerably
10.	Gives predominant attention to the rural sector			X
11.	Lessens the disparity between incomes in rural and urban areas (short-run)	X		
12.	Lessens the disparity between incomes in rural and urban areas (long-run)		X	
13.	Expands and improves adult and nonformal education, especially adult literacy		X	
14.	Emphasizes relevant subject matter content on all educational levels			X
15.	Calls for modern and tested methods of teaching and learning consistent with sound learning theory and budgetary resources			X
16.	Calls for modification of the testing and examination system			X
17.	Includes variety of experiences required for leadership development and training			X
	(continued)			

Criterion Number	Criterion Description	Extent to which Project meets Criterion		
		Slightly	Moderately	Considerably
18.	Highlights and implements the importance of modern school design			X
19.	Incorporates experimentation, research, and innovation			X
20.	Calls for intra- and inter-sectoral cooperation and coordination			X
21.	Gives high priority to cultural enrichment			X
22.	Nurtures teacher training institutional growth for granting of advanced degrees		X	
23.	Utilizes latest relevant know-how from other nations for adoption with adaptation here		X	
24.	Possesses high potential for multiplier effect			X
25.	Provides a project life duration adequate to achieve success		X	
26.	Provides sufficient flexibility to allow for unplanned creative efforts and spin-off			X
27.	Recognizes the interrelatedness of various educational areas by calling for a multi-dimensional, sectoral project			X
28.	Aims all goals and activities at eventual institutionalization and self-reliance			X

C. Evaluation of Project During Operation

The project proposal as presented in earlier sections has attempted to draw a balance between adequate structure required to organize and administer a multi-faceted project on the one hand and a commensurate measure of openness and flexibility to allow for freedom of action, creativity, and spin-off on the other. Openness and flexibility are indispensable to the development of viable programs, yet they can all too well go astray unless they are balanced by thorough and systematic evaluation. To ensure such evaluation, the following guidelines are recommended:

1. Basic overall responsibility for evaluation of the project rests with the CCC. In fact, one of the CCC's major tasks is to make certain that the project is continuously on target in terms of objectives, outputs, and deadlines.

2. The FOU, operating within guidelines established by the CCC, and with major direction and assistance coming from the Research, Testing, and Evaluation Team, must assume overall responsibility for continuous field evaluation.

3. The advance planning team which is scheduled to arrive at the pilot site on September 1, 1973 will be responsible for collecting baseline data related to current conditions, practices, and achievement and performance levels of both students and teachers. These data are

vital in terms of measuring future growth.

4. Each writing and service team is responsible for identifying specific behavioral objectives for its particular discipline to serve as benchmarks against which to measure future achievement.

5. All teams, in the development of work plans for their special areas, will include plans, instruments, and approaches for continuous evaluation of their work throughout the life of the project.

6. At the end of every fiscal year, each team chairman is responsible for submission of a comprehensive written activity report to the FOU chairman who, in turn, will edit and collate the individual reports and present them in one composite volume to the CCC and other agencies or individuals and donor groups as the CCC may suggest. Evaluation of activities and performance will be an integral part of each team's report.

7. Wherever appropriate, materials and activities produced by the NEDC should include evaluation sheets, reactionnaires, projective questionnaires, case study materials, etc. to capture the true reactions of individuals utilizing a particular books or material, or engaged in a special activity.

8. Periodically, throughout the project, writing, service, and supporting team members, administrators, teachers, and others closely identified with the project should be required to utilize

instruments that call for self-evaluation.

9. At the discretion of the CCC and FOU, concentrated, in-depth evaluations focusing on specific facets of the project may be called for from time to time utilizing short-term specialists from Thailand and/or abroad.

10. After the project is in full-scale operation for a period of two years, the CCC in consultation with various participating external assistance agencies should appoint a three to five man team to conduct a comprehensive evaluation of the total project and to submit both a written and oral report of its findings and recommendations.

The purposes of the ten recommendations just presented are intended not only to enhance the productivity and performance of the project, but also to encourage and promote a climate of search and inquiry which every worthwhile educational venture must surely require if it is to experience the exhilaration of human discovery and accomplishment.

BIBLIOGRAPHY

Academy for Educational Development, Inc., Educational Technology and the Developing Countries, U.S. Agency for International Development, Bureau for Technical Assistance, Office of Education and Human Resources, Washington, D.C., 1972.

African Primary Science Program, Programming for Change in Science Education and Inservice Training of Teachers and Evaluation of the African Primary Science Program, Education Development Center/USAID, Newton, 1970.

Agency for International Development, "Complete Text of Agency's Reform Plan Notes Need for Major Changes", Front Lines, Washington, D.C., January 27, 1972.

Alex Inkeles, "Participant Citizenship in Six Developing Countries", The American Political Science Review, Vol. 63, No. 4 (December 1969).

Alice M. Miel and Henry J. Rissetto, A Study of Curricular and Facilities Factors Relevant to a Proposed Education Orientation Center at Bagamoyo, Tanzania, Teachers College, Columbia University, 1970.

Aree Sunhachawee, "A Role for the Provincial Branches of the College of Education", The Social Science Review, No. 2, Vol. 7, September-November 1969.

Audrey Ward Gray and Alton C. Straughan, Jr., Education in Thailand: A Sector Study, The United States Operations Mission to Thailand, Bangkok, 1971.

Bhunthin Attagara and Ratana Tanboonteck, The Preparation of Teachers, Ministry of Education, Bangkok, January 1970.

Bhunthin Attagara, "The Challenge of Innovation in Teacher Education in Thailand", Paper delivered to International Council on Education for Teaching, London, July 1972.

Bhunthin Attagara, "A Critical Review of the Report of the International Commission for Educational Development/UNESCO", Bangkok, September 1972.

Boonchu Rojanastien, "Social Equity and Economic Growth", Financial Post, Bangkok, December 29, 1972.

Boonsom Martin, "Education to Meet the Needs of a Changing Society", A paper presented to the Education Society of Thailand, Bangkok, February 15, 1973.

Chira Hongladarom, "The Unemployment Problem - What Can We Do?" Financial Post, November 16, 1972.

Department of Elementary and Adult Education, Education in Thailand: A Century of Experience, Ministry of Education, Bangkok, 1970.

pp 271-272 blank

D. R. Bangtea, " Our Ailing Medical Profession", Financial Post, November 23, 1972.

Edgar C. Harrell, "The Employment Problem in Thailand", Office of Program, The United States Operations Mission to Thailand, Bangkok, September 1972.

Edgar O. Edwards and Michael P. Todaro, "Educational Demand and Supply in the Context of Growing Unemployment in Less Developed Nations", Paper delivered at Ford and Rockefeller-sponsored Conference, Bellagio, Italy, May 1972.

Editorial, "The Vital Bill", The Bangkok Post, December 11, 1972.

Editorial, "What Others Say", The Bangkok Post, November 24, 1972.

Edward J. Kelly, Henry J. Hermanowicz, and Herbert A. Smith, Teacher Education in Thailand: Problems and Prospects, The United States Operations Mission to Thailand, Greeley, Colorado, 1971.

Frank Farner, Project to Improve School Finance Practices in Thailand, First Quarterly Report, DREE/USOM, March 31, 1972.

Frank Farner, Project to Improve School Finance Practices in Thailand, Second Quarterly Report, DREE/USOM, June 30, 1972.

Frank Farner, Project to Improve School Finance Practices in Thailand, Third Quarterly Report, DREE/USOM, September 30, 1972.

Institute for Promotion of Teaching Science and Technology, "Draft Workplan", Ministry of Education/UNESCO, Bangkok, June 1972.

John W. Hanson, Enhancing the Contribution of Formal Education in Africa: Primary Schools, Secondary Schools and Teacher Training Institutions, Overseas Liaison Committee, American Council on Education, Washington, D.C., 1971.

Mark Blaug, The Rate of Return to Investment in Education in Thailand, The Ford Foundation, December 1971.

Ministry of Education, Third Educational Development Plan (1972-1976), Bangkok, 1971.

Ministry of Education, Foreign Loan and Grant Requirements of the Ministry of Education during the Third Five Year Plan Period, 1972-1976, Bangkok, 1971.

Ministry of Public Health, Population Growth in Thailand, 2nd Ed., Bangkok, 1972.

Moinuddin Baqai, "The GNP Myth is Exposed", The Bangkok Post, November 29, 1972.

Nicholas Bennett, et al, Prolems of Financing the Thai Educational System during the 1960's and 1970's, Educational Planning Division, Ministry of Education, Bangkok, June 1972.

Nicholas Bennett, "Primary Education in Rural Communities: An Investment in Ignorance?' Educational Planning Division/UNESCO, Ministry of Education, Bangkok, July 1970.

Nicholas Bennett, "The Need for Educational Transformation from the Marginal to the Utopian", Educational Planning Division/UNESCO, Ministry of Education, Bangkok, 1972.

Office of Education and Human Resources, Program Strategy in Education and Human Resources, FY 1973-1974, (Revised Ed.), Bureau for Technical Assistance, Agency for International Development, Washington, D.C., August 1972.

Philip H. Coombs, The World Educational Crisis, New York, Oxford University Press, 1968.

Renoo Suvannasit, "Human Resources Development 'Vital' to Economy", Financial Post, November 30, 1972.

Robert Gurevich, Khru: A Study of Teachers in a Thai Village, Doctoral Dissertation, University of Pittsburg, Pennsylvania, 1972.

Saroj Buasri, A Philosophy of Education for Thailand: The Confluence of Buddhism and Democracy, Ministry of Education, Bangkok, 1970.

S. Gordon, J. Guiton and A. Tantawi, Thailand: Teacher Education, UNESCO, Paris, 1970.

The Bangkok Post, "Development Review", Financial Post, Bangkok, December 31, 1972.

The Bangkok Post, "Policies Announced for the Country's Future", Bangkok, December 23, 1972.

UNESCO, Learning to Be, George G. Harrap & Co., Ltd., London, 1972.

UNESCO, Thailand: Proposals for Educational Development, Paris, 1970.

William P. Fuller, "Research for Education Planning in Thailand: Comments and Suggestions for the National Education Council", The National Education Council/Ford Foundation, Bangkok, May 1972.

William P. Fuller, "Using Multivariate Production-Function Models in Education Research", The National Education Council/Ford Foundation, August 1972.